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NOVEMBER, 1944

NO. 812

Inaugural Address of the New President

JAMES FARQUHARSON

Fort Collins, Colorado

VETERINARY science and the veterinary service can prosper only in an atmosphere of sincerity and honest effort. The objectives of the American Veterinary Medical Association are concisely expressed as the advancement of "the science and art of veterinary medicine, including their relationship to the public health."

These objectives stand for continued orderly progress in the conservation of livestock, and the control and elimination of communicable animal diseases, particularly those transmissible to man—thus contributing to our economic welfare and to human health.

They stand for better education of the undergraduate, and continued education of the veterinarian in the field. Prior to the war, the trend of graduates toward urban small animal practice and away from large animal practice in rural areas was undeniably but regrettably true. Had it not been for the war, small animal practice would have been saturated, in some urban areas, by this time. Therefore, the background and prospective field of service of future applicants for veterinary education should receive serious consideration by college deans and faculties.

If our obligation to the economic welfare of society is to be fulfilled, then the principle which must guide the whole veterinary curriculum is that every subject should be taught with the objective of producing more first-class practitioners. These high standards of professional endeavor should then be maintained by making suitable post-

graduate facilities available to practitioners. When a student matriculates in the course of veterinary science, he starts a life-long professional voyage. It is a career to be devoted to the highest type of public service: service to the livestock industry and to the national welfare. It should be characterized by high ideals and professional ethics, and grounded in a knowledge of, and an interest in, the economic, social, and political life of the community, state, and nation.

With the ranks of large animal practitioners depleted because of war, we congratulate those who remain for their untiring and conscientious efforts to carry on as they have done. Nevertheless, it appears that, in some instances, practitioners have become satisfied with their professional environment and have no interest or sense of obligation to their community and the future of the profession. They limit their activities to professional work and fail to realize and fulfill other contacts with the public. There is no other phase of veterinary science in which success depends more upon competent service than that of large animal practice. There is frequently only one veterinarian in a community, and he is quickly singled out and judged on the basis of his success or failure as a professional man and as a citizen. Thus, every veterinary practitioner has a dual responsibility—a responsibility to his community and a responsibility to his profession.

We believe in essential federal and state agencies, engaged in the regulation and control of devastating animal diseases in the interests of public health and the con-

Read by Dr. James Farquharson before the eighty-first annual meeting in Chicago, August 22-24, 1944, when installed as president.

servation of our livestock industry. We believe in an orderly evolution of regulatory methods to accomplish these ends, but we deplore some of the present trends which threaten the field of the private practitioner. Certain federal agencies, in particular, seem to be going beyond their recognized function of disseminating information, either directly to livestock owners or in coöperation with veterinary agencies and local practitioners, and are, instead, rendering veterinary service in direct competition with private practitioners.

There are many areas throughout the country in which veterinary service is lacking, or grossly deficient. This is a state, county, or community problem. To improve the lot of these unfortunate areas, we are beginning to hear much about socialized veterinary medicine. Free enterprise. thought, expression, and initiative would become shackled under the bureaucratic regimentation of socialized veterinary medicine. We stand for continued development and expansion of private practice. But, we realize that we must meet the challenge to provide veterinary service where needed, and we are sure this can be accomplished in a practical manner in conformity with the best traditions of a democracy.

We stand for promotion of well-planned research into the fundamental causes of animal diseases and their treatment, the results to be made available to, and advantageously utilized in the attainment of higher standards by, those engaged in private practice. We stand for the elimination of questionable information and material, prepared and disseminated by unqualified individuals who have no fundamental or clinical training in veterinary medicine and pathology.

We stand for the elimination of quackery, and of every influence and form of subtle and pernicious propaganda, advanced by unscrupulous interests, which is destructive to the health of livestock. We, therefore, stand for a better general education of livestock and poultry owners in animal sanitation and hygiene in order that they may be better informed and more capable of resisting or combating the propaganda of interests whose only motive is exploitation of the livestock owner.

We stand for more efficient direction of the use of public funds by federal, state, and educational agencies for investigation of animal diseases, in order to avoid needless multiplication of effort on research problems. Is there not a great deal of duplication and reduplication of effort on problems such as pullorum disease, brucellosis, mastitis, and other diseases, whereas the field is wide open and almost untouched in disease entities that are still associated with high losses? Reponsibility for the correction of these faults rests, in our opinion, with the administrative heads of our federal, state, and educational institutions. In research work, more encouragement should be given to the development and recognition of individual initiative.

The American Veterinary Medical Association stands for utmost coöperation with the Inter-Association Council on Animal Disease and Production, and with other allied scientific groups concerned with research on animal diseases and the conservation of livestock and poultry. Mutual respect by each of these groups for the motives and abilities of the others can do much to solve many problems that are of common interest. By unselfish coöperation, all groups will assume a stronger position in the respective fields they serve and will, at the same time, materially strengthen the over-all program of livestock conservation.

For the better protection and conservation of our wildlife, every effort should be made to place research and control of diseases peculiar to wildlife under competent veterinary supervision. The present policy, under the Department of the Interior, is woefully inefficient and apparently not free from political influence. This is not consistent with capable organization nor is it in the best interests of the American public and its vested rights in our wildlife.

We should strive for re-establishment of the Federal Meat Inspection Service under experienced, capable, and professional leadership in the Bureau of Animal Industry.

The American Veterinary Medical Association stands for greater unity and coöperation between the state veterinary
societies and the national organization. In
order to strengthen the national association,
and in turn strengthen the state organizations, it seems desirable that members of
state organizations should automatically
become members of the AVMA. Consideration is being given to a plan to effect this
relationship; when completed, the plan will
be submitted to the constitutent associations for suitable action.

The mutual professional interests of

veterinarians in Canada, Latin America, and the United States are fully recognized and appreciated. We encourage and would welcome more of our Canadian and Latin-American colleagues to join our ranks. The same is true of the veterinarians in the Bureau of Animal Industry.

These are only a few of the many principles and policies to which we must adhere, but if we do aspire and adhere to them, I am sure the future will be immeasurable in its possibilities.

I should like to quote W. A. Shumaker, editor of *Law Notes*, concerning "What Makes a Profession":

"If there is such a thing as a profession as a concept distinct from a vocation it must consist in the ideals which its members maintain, the dignity of character which they bring to the performance of their duties, and the austerity of the selfimposed ethical standards. To constitute a true profession there must be ethical traditions so potent as to bring into conformity members whose personal standards of conduct are at a lower level, and to have an elevating and ennobling effect on those members. A profession cannot be created by resolution or become such over night. It requires many years for its development, and they must be years of self denial, years when success by base means is scorned, years when no results bring honor except those free from the taint of unworthy methods."

Regional Milk Sanitation

According to a paper presented at the annual conference* of the Iowa Association of Milk Sanitarians, 83 per cent of milk-borne disease occurs in cities of less than 10,000 population, and 95 per cent in cities under 25,000. The cause, of course, is incomplete supervision of the milk supply, due to the fact that some of the smaller communities feel that they cannot afford to pay a physician more than \$200 a year to perform the duties of health officer. The author points out that he is expected to act as the milk inspector but naturally hesitates to jeopardize practice by arguing with dairymen and their friends. These obstacles were overcome in one instance by grouping Marshalltown, Grinnell, Tama, Toledo, Newton, and Traer into a sanitary community, employing a sanitary engineer, and allocating the cost and the service among them. In the group are 16 pasteurizing plants receiving milk from 100 farms. and 14 farms distributing raw milk. The service requires 900 miles of travel monthly and the equipment for making routine examinations of milk. Several such sanitary communities are operating in Iowa under the United States Public Health Service Ordinance.

*By C. A. Hooven, Marshalltown, Iowa, Milk Technology, May-June, 1944.

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Schema on Swine Feeding



A graphic refresher on the quantitative formula for making up a balanced ration for swine—revealing, even though the qualitative formulas are ignored: Left to right, carbohydrate, protein, salt lick, greens. The picture is taken from the Journal of the Department of Agriculture of South Australia, where it is used to illustrate an article on the "Value of Protein for Pigs," by Pig Husbandry Adviser W. S. McAuliffe.

Bovine Leptospirosis

ERWIN JUNGHERR, D.M.V.

Storrs, Connecticut

ALTHOUGH canine leptospirosis was recognized in North America by Kirkwood and Horning¹ in 1923, the present widespread interest in the disease commenced with the reports from Connecticut2 and California,3 The corresponding infection in man (Weil's disease) was first observed by Stimson4 in 1905, according to Packchanian,5 has lately received increased attention as an occupational hazard,6 and is suspected of occurring more frequently than actually diagnosed.7 The first human case in New England was reported by Jeghers et al.,8 and in Connecticut by Blake.9 In foreign countries, field mice, cats, foxes, and horses have been found affected by leptospirosis. 10, 11 Pigs may suffer from the spontaneous disease,12 and may play a rôle in its transmission to man. 13, 14, 15

All available reports on bovine leptospirosis, accessible to the writer in abstract form only, have originated from the U.S.S.R. Spirochetal jaundice of cattle was first reported from the North Caucasus by Michin and Azinov16 in 1935. The causal Leptospira was found to be pathogenic for guinea pigs and white mice, and was thought to be spread by urine, feces, pasture, water, ticks, insects, and rodents. Vishnevskii¹⁷ was unable to substantiate, experimentally, these suggested modes of transmission. The organism was termed Leptospira icterohaemoglobinuriae vitulorum and considered18 to be intermediate between Borrelia recurrentis and Leptospira icterohaemorrhagiae. Semskow19 observed

the disease in swampy areas of Southern Russia, especially from May to August, Acute and subacute forms affected primarily calves up to 3 months old; and were characterized by pyrexia, icterus and hemoglobinuria, and mortality up to 50 per cent within two to nine days; the "rudimentary" form characterized by bilirubinemia and reddish urine was mild and prevailed in adult cattle. The organism was termed L. icterohaemoglobinuriae, found to be pathogenic for calves and lambs, but not for guinea pigs and rabbits, and was shown to be serologically related to the human Leptospira. The pathology of these bovine cases according to Awrorow20 was characterized by icterus, ulcerations on the cutaneous and mucous surfaces of the head, subcutaneous edema, swollen liver, subserous hemorrhages, gastroenteritis and cherry-red urine, and microscopically by central necrobiosis and round cell infiltration in the liver associated with degenerative changes in the kidneys and Terskikh21 studied human leptospirosis in infected cattle districts, found 140 to 147 bovine serums to agglutinate the human Leptospira, and succeeded in recovering an organism from calf's blood termed by him Leptospira vitulina 8. bovina. Lyapustin²² found arsenicals and blood transfusions moderately effective treatments in the early stages of bovine icterohemoglobinuria but had the best results with a silver-ammonium leptospiricide devised by Terskikh. In summary, it would seem that the occurrence of bovine leptospirosis and its importance for man has

From the Department of Animal Diseases, Storrs Agricultural Experiment Station, Storrs, Conn.

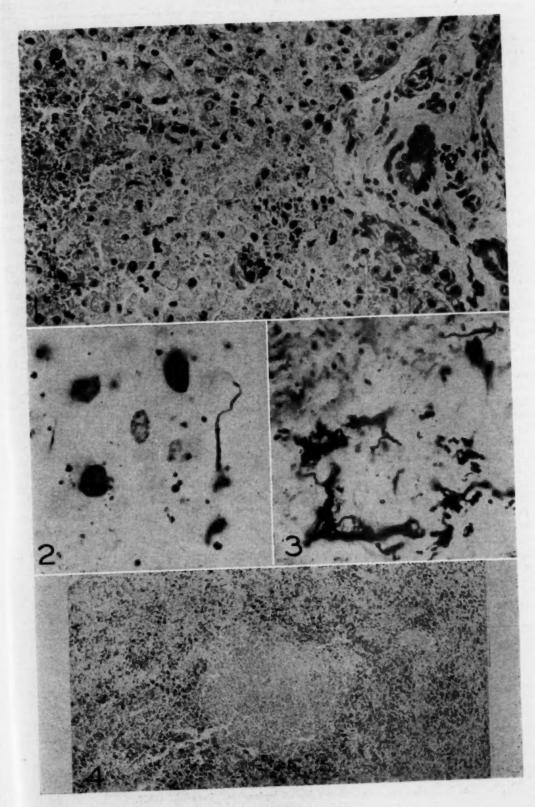
LEGENDS FOR ILLUSTRATIONS ON OPPOSITE PAGE

Fig. I—Case I. Liver showing diffuse karyorrhexis and pyknosis. An area of sinusoidal congestion and hemorrhage on left, a portal island with 2 bile ducts on right. H. and E. x400.

Fig. 2—Same as Fig. 1. Three pyknotic liver cell nuclei and two leptospirae in focus; the organism on right has the shape of a whip and shows a periplastic envelope in the straight handle-like portion. There the photographic negative showed definite helicoid inner structure. Levaditi. x1500.

Fig. 3—Case 2. Kidney showing a large leptospiral focus with numerous helicoid bodies. Levaditi. x1500.

Fig. 4—Case I. Spleen showing numerous hemosiderin-laden cells in pulp, the Malpighian corpuscle in center is free of them. Gram. x80.



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been established in the U.S.S.R., but that the nature of the causative organism, especially its relationship to known serologic types, is uncertain.

OBSERVATIONS

The present report deals with the pathologic investigation of 3 fatal cases in adult cattle.

Case 1.-A modern Guernsey herd of about 60 milking animals, located in the northwestern hilly section of Connecticut, had previously lost 2 cows within a few months from undetermined causes. In May 1943, a 5-year-old cow, about four and onehalf months after the last (normal) calving and while in high milk production, showed anorexia, subnormal temperature, and evidence of pulmonary congestion for six days. It went into convulsions, controllable by nembutal, and died one hour later, according to Dr. C. P. Hines. An autopsy was performed six hours after death by car lights. The constitution of the animal conformed to the anamnestic data. body surfaces were normal. Numerous petechiae and hemorrhagic ecchymoses were observed in the subcutaneous shoulder region on the right side, the side on which the animal was lying when it died. thoracic organs were normal except for some old pulmonary adhesions on the apical lobes and a small amount of reddish-tinted fibrin on the diaphragm. The abdominal organs were likewise normal except that the rumen showed a large amount of dehydrated ingesta, and the liver diffuse central congestion, so-called "nutmeg" appearance. Grossly, the brain was normal.

Laboratory examination of various samples of body tissues and fluids yielded the following results: Qualitative urine analysis was negative for glucose and ketone bodies, but strongly positive for albumin.

Liver and urine examination by Dr. E. M. Bailey of the Connecticut Experiment Station did not reveal common poisons, except traces of lead. Aërobic and anaërobic cultures yielded a few colonies of a Proteuslike organism from the liver and an Escherichia-like organism from the spleen; both of which proved to be nonpathogenic for guinea pigs.

Histologic examination (hematoxylineosin, Levaditi's, and Gram's methods, frozen sections stained with Sudan IV) failed to show any definite lesions in the brain, abdominal lymph nodes, and heart. The spleen exhibited pericorpuscular congestion with the pulp tissues containing an enormous number of large blood-pigment-laden phagocytes (fig. 4). The pigment gave a strong Prussian-blue reaction for iron. The liver showed numerous areas of sinusoidal congestion and small hemorrhages of fairly regular central distribution. In and near the congested areas, the majority of the liver cord cells presented severe dislocation and various stages of necrobiosis, particularly karyorrhexis, but also bizarre hypertrophic nuclear figures (fig. 1). The hepatonuclear damage appeared widespread on cytologic examination, but did not have the architectural arrangement of ordinary focal necrosis. Gram-stained sections did not reveal organisms, while corresponding Levaditi preparations showed numerous scattered helicoid argentophile bodies (fig. 2). The renal pathology was characterized by slight thickening of the glomerular capsules accompanied by metaplasia of the parietal lamina, protein precipitate in Bowman's spaces, and congestion of the tuft capil-Certain sections of the straight tubuli were hypertrophied and showed vacuolated epithelium which contained

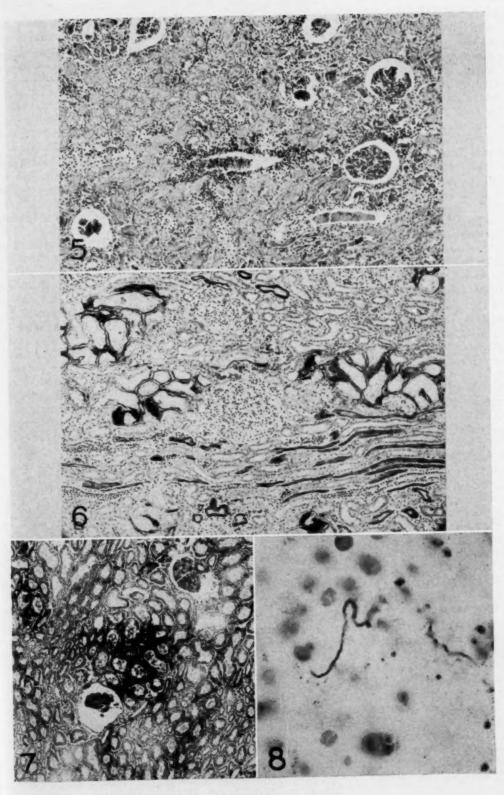
LEGENDS FOR ILLUSTRATIONS ON OPPOSITE PAGE

Fig. 5—Case 2. Kidney showing widespread tubular necrosis (karyolysis and eosinophilia of epithelium); there is perivascular and interstitial infiltration in center and hyaline cast formation in right lower aspect. H. and E. x80.

Fig. 6—Case 3. Kidney showing marked hypertrophy of three convoluted tubular groups together with hyperchromaticity of basement membranes. Two normal glomeruli, one in center and above center. Levaditi. x80.

Fig. 7—Case 2. Kidney showing massive interstitial infiltration of leptospirae (black) in center and upper left. A damaged glomerulus in left lower center. Levaditi. x80.

Fig. 8—Case 3. Lymph node showing two typical leptospirae. Levaditi. x1500.



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sudanophile material. Levaditi-stained tissue blocks showed scattered groups of argentophile organisms.

Case 2 and 3 .- The scene of the losses was an up-to-date dairy-poultry farm, located in a flat open section of northcentral Connecticut and maintained for commercial feed research studies. Rat infestation of the premises was said to be light. Two Guernsey cows 5 and 7 years old, respectively, belonged to a group of pregnant animals which were fed a high protein ration in connection with ketosis studies. Both calved normally during the last week of January 1944, developed a mild fever, and died within two days. The high protein diet was suspected as being responsible for the losses. In case 2, fresh tissues were submitted to the laboratory; in the other (case 3), complete autopsy was performed in the field.

Laboratory examination from case 2 gave the following results: Quarter-milk samples drawn on the day of calving showed a large amount of blood in the secretion of both left quarters; a mixed bacterial flora in all quarters; and, in addition, Streptococcus agalactiae in the left The urine gave a strong hind quarter. qualitatively positive test for albumin, but was negative for reducing sugar. Bacteriologic examination yielded weakly hemolytic, white staphylococci. Microscopic section of the ileum showed slight congestion of the subepithelial capillaries and mild coccidial infection. The spleen tissue appeared dark red and soft, and yielded a nonhemolytic diplococcus - like organism. Under the microscope, it exhibited marked congestion of the pulp with numerous (iron test positive) hemosiderin-laden phagocytes. Grossly and microscopically the liver appeared normal; a nonhemolytic streptococcus was recovered culturally.

The kidney was the most interesting tissue; gross examination showed the subcapsular surfaces to be pale but otherwise unaltered while the cut surfaces exhibited whitish pencil-line-like irregular striae, particularly noticeable in obliquely reflected light. Bacteriologic examination was negative. Histologically, the cortex presented large foci of eosinophilic karyolytic tubular necrosis associated with glomerular atrophy, and occasional formation of cellular casts in the tubular lumina and lym-

phoid infiltrates in the interstices (fig. 5). The medulla showed corresponding changes of lower intensity. Levaditi-stained slides, even grossly, showed large blackish foci which under low power revealed massive argentophile coils or clumps, primarily in peritubular or periarteriolar position (fig. 7); under high power the edges of these foci resolved themselves into typical argentophile helicoid leptospirae (fig. 3).

Pathologic examination of case 3 failed to show significant changes on the body surfaces except for the left front quarter of the udder which was turgid and bluishred and exhibited, on incision, subcutaneous edema and extensive hemorrhages. teriologic tests yielded heavy growth of a subtilis-like organism. The subcutaneous tissue presented numerous petechiae and ecchymoses in the right scapulo-thoracic region. The serous membranes, particularly in the thoracic cavity, also showed fairly numerous petechiae and hemorrhagic blisters. The spleen was congested and soft; culturally, a member of the Clostridium welchii group was recovered via guinea pig inoculation. The microscopic structure was marked by congestion and hemosiderin deposits in the splenic pulp. The liver was of light brown mahogany color, probably due to the presence of numerous finely dispersed fat droplets in the parenchymatous cells, as seen in Sudan stained frozen sections. Cultural tests were nega-The kidneys presented exactly the same gross appearance as in case 2, that is, irregular striae on the cut surface. The microscopic pathology was characterized by cloudy swelling of the tubular epithelium and the presence of occasional small calcified casts. There was atrophy in some of the glomerular tufts. The lesions observed in H. and E. stains were mild as compared with those in case 2, but the particular section may not have been representative because silver-impregnated slides showed groups of markedly hypertrophied cortical tubuli with abnormally thick basement membranes (fig. 6). Leptospira-like bodies were seen here and there investing the altered tubular surfaces. A mesenteric lymph node gave the most striking histologic picture in that it showed certain lymph follicles to have lost stainability, an expression of necrobiosis. Such foci proved to be associated, in Levaditi preparations,

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with dense coils of argentophile organisms which, especially in the perimeter, showed up as delicate helicoid leptospiral bodies (fig. 8).

DISCUSSION AND SUMMARY

The occurrence of leptospirosis as a spontaneous disease of cattle and its relationship to human infection has been established in the U.S.S.R.

The present report deals with the pathologic investigation of 3 fatal "mysterious" deaths in adult cows in Connecticut during 1943-44. In one of them, illness developed at the height of milk production; and was characterized by anorexia, subnormal temperature, and terminal convulsion on the sixth day, according to Dr. C. P. Hines. The only gross lesion was so-called "nutmeg" appearance of the liver which corresponded microscopically to multiple areas of sinusoidal congestion and hemorrhage associated with extensive parenchymatous necro-Levaditi preparations showed numerous Leptospira-like bodies in the liver and few in the kidneys. The spleen showed extensive hemosiderosis.

Two cows died on another farm in one week, the loss occurring within two days after normal calving. Symptoms consisted of mild preparturient fever, anorexia, and bloody milk. Gross pathology was characterized by edema and hemorrhage in the udder, numerous petechiae and ecchymoses in the subcutis and subserosae, and abnormal striation of the renal cut surface. Microscopically, 1 case showed large foci of tubular karyolytic necrosis in the kidneys, associated with large nests of Leptospira organisms in silver impregnated sec-The other case showed, primarily, foci of tubular hypertrophy in the kidneys and nests of Leptospira in an adjacent mesenteric lymph node.

Attempts to isolate the suspected causal organism by the methods employed so far have been inconclusive. Leptospira were present in focal accumulations in certain organs although also scattered outside the main organic foci; a fact which would influence cultural studies.

The association of massive foci of Leptospira with the principal pathologic changes is believed to characterize the reported cases as bovine leptospirosis.

The observations suggest—in similar

"mysterious" cattle losses-the advisability of submitting, aside from fresh iced tissues, thin formalin-fixed slices of parenchymatous tissues, for laboratory examination. On the whole, it appears that cattle aside from human beings, dogs, and rodents, should be included in the concept of the contagious cycle of leptospirosis in the United States.

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The Value of Prunes as a Constituent of Dog Food

AGNES FAY MORGAN, Ph.D., and MARY GROODY, B.S.

Berkeley, California

THE PROBLEMS involved in providing nutritionally adequate, low cost constituents for dog foods have become almost impossible to solve, because proteins and vitaminrich foods are scarce. It seems, therefore, worthwhile to report a series of feeding experiments on the use of cull prunes as a

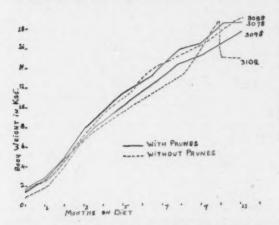


Fig. 1—Growth of 4 Chows on a mixture of 5 well-known brands of commercial canned dog foods, with and without 10 Gm. dried prunes per kilogram per day, instead of 30 Gm. of the food.

supplement to commercial dog foods supposedly complete. As a large quantity of cull prunes is usually available, their use in the form of whole prune paste, a practical product, in dog foods might provide

From the College of Agriculture, University of California, Berkeley.

The authors acknowledge the assistance of Prune Proration Zone No. 1, San Francisco, in the conduct of this study.

(Continued from preceding page)
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a market were the paste proved to be useful and cheap enough.

The basal diets chosen for the growth studies of the supplementary value of such prunes were mixtures of well-known and supposedly adequate commercial dog foods. In order to observe the effect of the addition of prunes, 20 per cent of the solids of the basal diets was replaced by prune pulp or whole prune paste for half of the members of each litter. Were the claims of the manufacturers well based, all the dogs fed only the basal diets should grow satisfactorily and the performance of the prune-fed animals should offer some index of the value of the prunes as a part of such diets. The palatability of this proportion of prunes in a dog food was the chief ques-

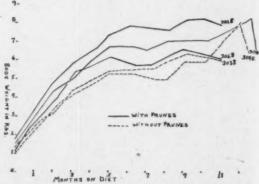


Fig. 2—Growth of 5 Fox Terriers on a mixture of 5 well-known brands of commercial dry dog foods, with and without 10 Gm. dried prunes per kilogram per day, instead of 10 Gm. of the food.

tion to be answered. Since no comparison of the commercial foods was planned, mixtures rather than single foods were chosen.

THE FEEDING PLAN

The plan of the experiment was to feed young dogs of the same litter from the time of weaning, at 5 to 8 weeks of age, only the selected commercial dog-food mixture, 50 Gm. per kilogram per day of dry food, or 150 Gm. per kilogram per day of canned food. Some dogs fed each type of food were given prunes. The quantities provided 200 to 210 calories per kilogram daily,

an amount which has been found to be adequate for the growth of young dogs raised under laboratory conditions. As the dogs approached the adult size, the quantity of food needed decreased but, in all cases, the same daily intake was consumed by the animals whose growth rates were being compared.

The dogs which were given prune pulp or whole prune paste received, per kilogram of body weight per day, 40 Gm. dry food and 10 Gm. prunes or 120 Gm. canned food and 10 Gm. prunes. The calorie intake was thus kept the same as that of the

1/	ABLE I-	-Plan of Feedi	-	
LITTER	Dog	BASAL	PLE- PI	EDING ERIOD ONTHS
1st generatio				
A (Chows)	3100	Mixture of 5 commercial	None	11
,	3080	canned foods		11
	307♂	Same as above	10 Gm. prune pulp or paste	11
	309 d		per kg. per day	11
(Fox Ter-				
B1	303 8	Mixture of 5	None	11
B2	3049	commercial dried foods		121/2
B2	-305♀	Same as above	10 Gm. prune pulp	13
B2	-306♂		or paste per kg. per	11
B1	3020		day	11
2nd generation C, offsprin of 3042,	on g 352đ	Same as above	None	8
302♂	3502	Same as above	20 per cent of diet displaced by prune paste	y
D, offsprin of 3059 3020		Same as above	20 per cent of diet displaced by	y
	3569	~	prune paste	
	3580	Same as above	None	8
	355 3			8

controls without prunes. The feeding plan is shown in table 1.

The dry food mixture was made up of five well-known brands of dog food, all supposedly adequate, and the canned food mixture likewise was made up of five wellknown brands, also all supposedly adequate for growth and maintenance.

Each mixture was repeatedly sampled and chemically analyzed. The average composition of the dry food mixture was: water, 7.2; ash, 6.6; fat, 4.1; protein, 22.3; and carbohydrate (nitrogen free extract), 59.4. The canned food mixture had the composition: water, 70.6; ash, 2.6; fat, 3.4; protein, 12.8; and nitrogen free extract,

10.7. By bomb combustion, the dry mixture was found to yield 4.30 calories per gram, the canned food mixture, 1.43, and the prune pulp, 3.02.

GROWTH OF THE EXPERIMENTAL GROUPS

The canned food mixture was fed to a litter of 4 Chows, 2 of which received 10 Gm. prune pulp and 120 Gm. canned food per kilogram body weight per day, and 2 received 150 Gm. canned food. These quantities of food were of equal calorie value. As shown in figure 1, the 4 animals grew equally well. The one female, 310, mated at the first estrus when 10 months old, delivered a litter of 5 normal pups. When these pups were weaned four weeks later, all 4 of these dogs were sacrificed.

Neither advantage nor disadvantage was noted as a result of the inclusion of this amount of prune pulp in the canned food ration. Further use of the canned food as basal diet was then discontinued.

The dry food mixture was fed to 5 Fox Terriers, 50 Gm. per kilogram body weight per day to 2 dogs, a male, 303, and a female, 304; and 40 Gm. plus 10 Gm. prune pulp similarly to 3 dogs, 2 males, 302 and 306 and a female 305. As indicated in figure 2, the 3 prune-fed dogs grew better at all stages than did the other 2 dogs. Dog 302 outstripped his pair-fed litter mate 303, and 305 her pair-fed sister 304. A photograph of the latter 2 animals at the age of 7 1/2 months is shown in figure 3. When these 2 females were about 11 months old, they were mated with male 302 and delivered 4 and 5 pups, respectively. The pups were weaned at 28 days of age and the mothers sacrificed. The 3 males of the original group were sacrificed a month earlier.

During the last four months of the eleven-month feeding period, dogs 302 and 305 received a whole prune paste* made by grinding pits and pulp, while dog 306 continued to receive the prune pulp. As indicated by growth (fig. 2), the paste appeared to be even better utilized than the pulp. At any rate, no disadvantage could be observed to result from its use.

THE SECOND GENERATION ON DRY FOOD

The litters produced by the two females, 304 and 305, on dry food and dry food

The whole prune paste was made by Rosenberg Bros. and Company of San Francisco.

plus prunes, respectively, were continued on the diets since differences in the condition of the first generation appeared to warrant the continuation.

The litter produced by the prune-fed female, 305, consisted of 4 pups which grew well and were weaned at 5 to 6 weeks of age to the dry food and whole prune paste mixture, the prune paste constituting 20 per cent. of the mixture. This was done



Fig. 3—Two female Fox Terriers 71/2 months old, raised on dry dog foods. Dog 305 (left) received 10 Gm. dry prunes per kilogram per day instead of 10 Gm. of the dry food mixture. Dog 304 (right) received only the dry food. The food intakes were the same.

by gradual addition of the mixture to the dog stock diet which was known to be adequate for young pups. At 8 to 10 weeks of age, the group was divided, 2 being given the dry food alone and 2 continued on the prune mixture. One of the males, 358, without prunes, proved to be an off type, much taller, longer legged than the others, and somewhat heavier. All 4 throve, however, and no great difference could be seen in those receiving the prune supplement (fig. 4). The dogs were sacrificed when they were 10 months old.

The litter produced by the nonprune-fed female, 304, consisted of 5 pups which were stunted during the suckling period and were not successfully weaned to the dry food mixture. They had to be kept on the stock diet until they were 3 to 4 months old, by which time 3 had died. Of the 2 remaining, the female, 350, was then placed on the dry food, 20 per cent of the food displaced by whole prune paste, and the male, 352, on the dry food alone. As shown in figure 4, 350 grew better than

352. These animals also were sacrificed at 10 months of age.

The condition of these second generation animals indicated that the dry foods used, whatever may be said as to their adequacy for maintenance of adult dogs, fell short of being satisfactory for reproduction. The prune supplement supplied in the mother's diet apparently improved the condition of the litter markedly and this difference in nutritive condition at the weaning age was of greater importance in determining the later growth performance than was the addition of the prunes to the diet after wean-Thus, the growth of all members of the litter of prune-fed 305 was better, regardless of prune additions to the diet of the pups, than of the 2 surviving members of the litter of nonprune-fed 304.

THE CONTRIBUTION MADE BY THE PRUNES

The exact nature of the supplementary nutrients which the prunes supplied cannot be determined from these experiments. Prunes are known to contain measurable quantities of carotene, thiamin, riboflavin, pantothenic acid, and nicotinic acid^{1, 2} as well as mineral constituents, sugars, a laxative principle, and no doubt several unidentified nutrients.

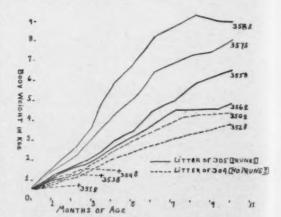


Fig. 4—Growth of second generation Fox Terriers on the mixture of dry dog foods, with and without prunes. Dogs 355, 356, 357, and 358, were offspring of dog 305, and dogs 350, 351, 352, 355, and 354 offspring of dog 304.

Since dry foods are known to be subject to loss of carotene or vitamin A in storage, the carotene content of the prunes was thought to be of importance in improving such foods. An effort was made, therefore, to follow the level of vitamin A in the serums and livers of some of these animals.

THE SERUM VITAMIN A OF THE DOGS

Blood vitamin A was determined by means of the Carr-Price reaction of vitamin A with antimony trichloride, the intensity of the blue color being measured at 620 with the photoelectric colorimeter3. This was done occasionally during the feeding period as well as when the dogs were sacrificed. After nine months on the experiment, the 3 Terriers which received prunes had 10 units of vitamin A per gram of serum and the 2 without prunes 2 units per gram. However, three months later when the dogs were killed, the difference was much less and the levels found were more variable-6 to 8 in the former group and 4 and 5 in the latter. The vitamin A of the serum of the 4 Chows fed canned food with and without prunes remained quite constant and unaffected by the prunes, at the level of 7 units per gram. Carotene was not measurable in the blood of any of these dogs.

It is probable that most of the vitamin A in the canned food was preformed from liver, kidney, or fish oil, and that the dry foods contained largely carotene, or that the fish-liver-oil vitamin, if originally present in the dry foods, was partly destroyed in storage. Both carotene and vitamin A, when intimately mixed in finely divided powdered or pelletted diets in contact with air, are known to be subject to oxidation.

THE LIVER VITAMIN A STORE

The vitamin A in the livers of certain animals was determined by a modification of the method of Davies.⁴ As shown in table 2, all of the dogs fed the canned food had large reserves of vitamin A in the livers and no difference due to the prune feeding could be seen. On the dry food, much smaller stores were found. In the first generation on dry food, females 304 and 305 may be compared, and males 303 and 306. The prune-fed female 305 had nearly three times as much liver vitamin A as nonprune-fed 304, and the prune-fed male 306 more than twice that stored by nonprune-fed 303.

It is interesting to note that all 3 females, regardless of diet, had considerably larger liver vitamin A stores than the comparable males. This probably may be ascribed to the greatly increased food intake which accompanied reproduction.

The second generation animals presented a less clear cut picture as to the effect of prunes on the liver vitamin A than did the first generation, possibly because of the disturbing effect of the prune supplement which the mother of litter D received. Thus, dog 352, a member of litter C, offspring of nonprune-fed 304, was the only dog carried throughout on the dry food without prunes. without prunes. This was the poorest specimen (fig. 4) of the six and had the This was the poorest lowest vitamin A store (table 2). The other member of this litter, 350, which was given the prune diet after weaning, was inferior to all members of litter D but better than 352 and had stored liver vitamin A about as well as the members of litter D. One member of litter D, 358, without prunes, exceeded all of the second generation in both size and liver store, but the other without prunes, 355, had the lowest vitamin store of that litter. The other 2 members of litter D, fed prunes, had normal liver vitamin A, similar to that formed in 350.

It is worth noting that 3 dogs of the second generation as well as 3 of the first generation were given whole prune paste containing pits, and that they made good growth and maintained normal health on this addition. There was no evidence of the purported toxicity resulting from hydrolysis of the cyanogen-containing glucoside of the kernels—a condition noted in the pits of fresh prunes according to Giaja.⁵

In a series of digestibility experiments with whole and ground prunes,6 it was noted that hogs, sheep, and cattle utilized prunes in both forms very well and that hogs and cattle cracked the kernels and swallowed the pits when the prunes were fed whole. The sheep rejected the seeds but utilized well the prune nutrients, which appeared to have feed value at about 85 per cent that of barley. The prune feed is low in protein, however, and must be supplemented with protein-rich roughages or concentrates, and because of its laxative nature should not be overfed. For dogs, the proportion used may be as great as 20 per cent of the dry feed.

SUMMARY

A litter of 4 Chows was fed from weaning for eleven months a uniform mixture

of five well-known canned dog foods. For 2 of these dogs, 10 Gm. prune pulp per kilogram body weight per day was substituted for 30 Gm. of the food, but the calorie intake was kept uniform in all cases. All 4 dogs grew well and neither advantage nor disadvantage appeared to result from the use of the prunes.

Five Fox Terriers of 2 litters were similarly placed at weaning on a mixture of five overshadowed any effect of the prune feeding after weaning.

The serum vitamin A of the prune-fed dogs was slightly higher than that of the others and the liver vitamin A reserves generally greater as well. The dogs fed the canned food, either with or without prunes, had 10 to 20 times as much liver vitamin as those of the dry food group, but among the latter, the prune-fed dogs,

TABLE 2—Storage of Vitamin A in the Livers of Dogs as Affected by a Prune Supplement to the Diets

*		Dog	PERIOD		VITA	MIN A
Diet	LITTER	AND	ON DIET MONTHS	WEIGHT Kg.	LIVER I.U./GM.	TOTAL I.U. IN LIVER
1st generation Canned foods	Λ	3100*	11	14.7	2960	1,036,000
Canned food with prunes	A	309 o*	11	17.6	4180	1,672,000
Canned food with prunes		307 o*	11	18.2	1670	635,000
Dry food	B1	303♂	11	5.8	98	14,700
Dry food	B2	304♀*	121/2	6.4	164	24,600
Dry food with prunes	B2	305♀*	13	7.3	498	75,000
Dry food with prunes	B2	306♂	11	6.0	202	30,000
2nd generation Dry food	C	352♂	8	3.7	84	13,300
Dry food with prunes	C	350♀	8	4.2	208	31,000
Dry food	D	358 of †	8 8	9.0	180	47,500
Dry food	D	355 of		6.6	54	13,900
Dry food with prunes	D	357♂	8 8	7.8	104	33,600
Dry food with prunes	D	356♀		4.6	136	22,000

*Sacrificed just after weaning a litter and therefore after a period of much increased food intake. †Apparently off-breed.

well-known dry dog foods, and 3 of them were given 10 Gm. prune plup per kilogram body weight per day instead of an equal amount of the food, the calorie intake being kept the same for all five. The prunefed dogs grew more rapidly to better final size in the eleven to thirteen months period than did the nonprune-fed group.

The 2 females of the dry food group each delivered a litter of normal pups at about the same time. All 4 of the young of the prune-fed females survived and were weaned normally. Only 2 of the 5 pups delivered by the nonprune-fed female survived and these were, only with difficulty, weaned to the dry food mixture.

The 6 survivors of the second generation were continued on the diet, 3 receiving the dry food mixture alone and 3 the same mixture with whole prune paste displacing one fifth of the dry food. All members of litter D of the prune-fed mother were superior in rate of growth to the 2 survivors of litter C, regardless of the diet of the The prune-fed member of litter C surpassed the other, but one nonprune-fed male of litter D surpassed all the others. The superior nutrition of litter D during the prenatal and suckling period apparently

especially of the first generation, had larger stores than did the nonprune-fed. prune supplement appeared, therefore, to make a contribution of provitamin A to the dry food mixture, but this cannot be assumed to explain in full the favorable results.

The whole prunes ground to a paste and including pits were used in several cases and found to be as satisfactory as the prune flesh alone.

It is concluded that such prune paste may be regarded as an economical and physiologically advantageous ingredient of dog foods.

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SURGERY & OBSTETRICS

AND PROBLEMS OF BREEDING

Rupture of the Prepubic Tendon in a Cow

Having long entertained the conviction that the parturient débacle known as rupture of the tendo prepubicus could not possibly occur in cows, owing to the presence of a fortifying ligamentous structure which

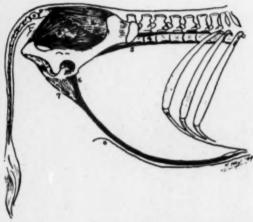
-After Emmerson, 1944

Fig. I—The Holstein-Friesian described in text. The author draws attention to the sawhorse stance.

he names the subprepubic tendon, the author, after making a critical examination of such a case, admits that his former belief was erroneous.

The case signalized was a grade Holstein-Friesian (fig. 1), which the owner described as having shown an unusually large abdomen prior to calving and as having given birth, unassisted, to a live but nonviable calf on Dec. 4, 1942. On rebreeding, she gave birth to twins, also unassisted, on Feb. 3, 1944, after a gestation period of 284 days. Both calves, a male and female, were living and healthy two months after birth. For the last pregnancy, the abdomen was described as very large with some ventral edema. For three days before calving, the cow had difficulty getting to her feet and in standing. When seen thirty-three days in the lying position but showed distress when standing. The udder and teats were displaced forward and downward, the front teats at the level of the pasterns. The teats hung too low to milk handily. The calves had to suck kneeling down. The tuber ischii were tilted upward and the tuber coxae downward from the vertebral arch. There was ventral edema from the udder to

later, she was eating well and comfortable



-After Emmerson, 1944

Fig. 2—Schema showing (7) the location and attachments of the subprepubic reinforcement of the prepubic tendon, a structure evidently important that is not mentioned in standard works on comparative veterinary anatomy.

the sternum. The cow walked with great effort.

Above and behind the udder, there was a firm, well-encapsulated enlargement, the size of a football which, at the autopsy, was found to be a seroma related to torn musculature on both sides of the medial line. The prepubic and subprepubic tendons were ruptured a short distance from the pubic brim. The autopsy dissection further revealed fragments of these two tendons attached to the pubis, showing that the solution of continuity was a rupture, not a syndesmorexis.

An excerpt from "Rupture of the Prepublan and Subprepublan Tendons in a Cow" by M. A. Emmerson, D.V.M., School of Veterinary Medicine, University of Pennsylvania, which appeared in the University of Pennsylvania Bulletin of April 3, 1944.

Successful Artificial Insemination in a Mare

LT. COL. ROBERT L. ANDERES, V.C., U.S.A.

Because of difficulties in transportation and the time required for natural mating of his mare, Bonnie, a three-quarter Thoroughbred, Major Hugh D. Smith, V.C., U. S. Army (A.P.I., '36), depot veterinarian, Richmond Army Service Forces Depot, Richmond, Va., attempted artificial insemination.

Results are shown in the photograph which was taken May 1, 1944, when the filly was 3 months old.

Arrangements were made early last year with veterinary officers on duty at Front Royal Remount Depot, for collection of semen from a Thoroughbred government re-



Major Hugh D. Smith, V.C., U.S. Army, and his mare Bonnie, with her foal, produced by artificial insemination.

mount stallion. On the third day of clinically observed estrus, Major Smith made the trip to Front Royal, 150 miles distant; semen was collected by means of an improvised artificial vagina, and transported in 3 sterilized 10 cc. test tubes, stoppered with cotton plugs. One vial was carried in an inside coat pocket, and 2 were slipped into fingers of a leather glove, and hung upright in the car. The outside temperature at the time was approximately 35 F.

Approximately seven hours were required to make the return trip, due to car trouble, but microscopic examination of samples from all 3 tubes showed many viable sperm on arrival at destination, however, sperm from the 2 vials carried in the glove appeared to be more active.

A sterile metal dose syringe with 6-inch pipe was the only instrument used to inseminate the mare. The semen from all 3 tubes was drawn into the syringe and the syringe carried into the vagina by hand. Injection was made through the partially dilated cervix directly into the uterus. Aschheim-Zondek test sixty days later revealed pregnancy.

The mare went to full term and foaled the filly shown in the illustration. Conformation and general health of the foal have been excellent. The mare showed clinical evidence of foaling heat and normal return of estrus.

From this outline of a successful artificial insemination in a mare without elaborate equipment or preparation, the practicability of artificial insemination in mares is demonstrated.

Major Smith considers that the prime factor in artificial insemination of mares is the rapid transportation of the semen under low temperatures, which has been brought out previously in experimental work. To accomplish rapid transportation, postwar airmail and express service offer veterinarians all over the world the means of transporting semen from stallion to mare. Another transportation means not to be overlooked is the use of carrier pigeons which may prove practical.

Demerol Habit-Forming

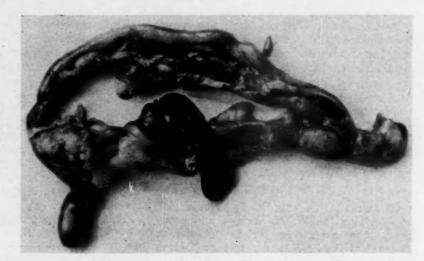
Isonipecaine, on the market under the trade name of Demerol, has been placed under the federal narcotic laws, by Act of Congress. The drug is a synthetic analgesic heralded as a substitute for opiates, less toxic than morphine and less cumulative. Druggists were required to account for stock on hand as of July 1, 1944, or expose it to seizure.

While Demerol has yet to be employed in veterinary medicine (so far as we know), its demonstrable value over morphine in human medicine forecasts its eventual use on animals. As an obstetric analgesic, it is reported in American Journal of Obstetrics and Gynecology as a superior product in repeated doses of 100 mg. with scopolamine 1/200 of a grain during labor. It is devoid of any harmful effect on the fetus, which is not always the case with morphine.

Intussusception of the Cecum of a Chicken

On March 27, 1944, a single-combed White Leghorn hen in good flesh was presented from the poultry department flock While probably of no particular pathologic concern, this case, in view of its infrequency, is reported for the sake of records and common interest. No similar instance has been observed at the poultry disease laboratory during the past seven-

The intussusceptum (dark portion) is shown exposed and attached to the normal cecum (extreme left) by multiple fibrinous adhesions.



for routine autopsy and diagnosis. History revealed that the bird had been found dead on the floor at the morning feeding hour and circumstances presented no evidence of cannibalism, injury, or predatory trauma.

Upon autopsy, abdominal viscera, and particularly the alimentary tract, were found coated and enmeshed in a serofibrinous peritonitis with numerous, freshly formed adhesions between both visceral and parietal peritoneum. Genital organs were active as evidenced by ovarian development and an egg in the uterus, although three large yolks were blighted and shrunken. Careful dissection of the lower digestive tract showed the anterior third of one cecum invaginated into itself and this portion dark, atrophic, and gangrenous. Following, and attached to, the intussusceptum were shreds of fibrin in the early stage of organizing into connective tissue. shreds were also adherent to the anterior segment of the normal cecum. The supporting mesentery presented considerable congestion of its circulatory network in addition to a fibrinous coating. No lesions or evidence were found within the cecum itself to account for this unusual pathology.

teen years.—Don R. Morrill, D.V.M., Oregon Agricultural Experiment Station, Corvallis, Ore.

Dog and Cat Feast

A better, unrationed dog and cat food was announced last week by a pair of New Jersey scientists who worked on the problem more than a year at the request of humane and veterinary associations.

The new pup and puss chow is made mostly of fish and chicken entrails, pressure cooked, then frozen. Its originators, Dr. Mark L. Morris, head of Raritan Animal Hospital, Stelton, N. J., and Dr. James B. Allison, Rutgers University biochemist, say dogs and cats like the chicken-and-fish-burgers.

"What's more," said Dr. Allison, "the stuff is good for them—better than many dog foods now manufactured. Tests have shown these are often low in protein. That's why we set to work to find non-rationed waste sources of protein. We found them in fish and chicken entrails."

But the new food isn't in commercial production yet.—Pathfinder, Oct. 15, 1944.

CLINICAL DATA

Clinical Notes

Precipitated sulfur, 25 Gm.; potassium carbonate, 10 Gm.; and yellow petrolatum, 125 Gm. is a popular ointment for the treatment of human scabies.

Suspensions of phenothiazole syringed into the throat is named as the right sort Dogs fed a roof "gargle" for pharyngitis and laryngitis.

In human medicine it is one of the drugs of choice in that rôle.

Of an article on "Studies in Trichinosis" by Veterinarian W. H. Wright and coauthors, the abstracter for the American Journal of Public Health remarks: "Moses was a shrewd one—Exposure to trichinosis infection is nearly uniform regardless of geographical or environmental factors. Evidence at hand points to the need for nation-wide preventive action."

The favorable action of riboflavin on the skin is illustrated by its use in the healing of cheilosis and bedsores in the human subject. Decubitus ulcers are treated with 5 mg. per day, administered orally. Even bedsores in dying patients respond to its action. Similar benefits are derived in corneal ulceration and vascularization.—Abst. J. Am. Pharm. A., July, 1944.

Hexachlorethane in Fluke Infection

Research work carried out by Dr. O. Wilford Olsen, U. S. Bureau of Animal Industry, Angleton, Texas, gives promising assurance that hexachlorethane reduces losses from liver flukes in cattle. The drug is emulsified with bentonite in water and given as a drench. It is obtainable from professional supply houses or through the drug trade.—C. D. Lowe, U.S.B.A.I. in The Country Gentleman.

Tetanus toxoid increases the concentration of antitoxin. For eighteen months, the concentration remains higher than that resulting from two doses of toxoid.—Lancet.

Dogs fed a ration containing 10 p.p.m. of sodium selenite for 150 days develop the typical phenomena of selenium poisoning while dogs rationed with food containing as much as 13 parts of selenium receiving also water containing 5 p.p.m of sodium arsenite show no signs of poisoning.—Abst. J. Am. Pharm. A., July, 1944.

Meat inspectors are getting more particular about stamping "Inspected and Passed" on the carcasses of odorous boars. "Better," says Journal-Stockman (Omaha), "pay a veterinarian \$3.00 or thereabouts to castrate boars and get them healed before starting them for the market." Castrated boars make good sausage and fetch upward of \$60.00; the condemned ones sell for 3 cents a pound, meaning that a 500 pounder nets \$45.00 for the \$3.00 investment.

Urea in the Dairy Ration

The shortage of protein feeds led to studies on the possibility of feeding synthetic urea to dairy cattle and other ruminants by the Agricultural Research Administration. While urea is not a protein itself, it contains the nitrogen needed by the rumen to make protein with the aid of its bacterial flora. Since hogs and fowl cannot synthesize protein, in vivo, urea is not useful in these animals. In ruminants, it can supply only about 16 per cent of the total protein requirements. It, therefore, does not replace protein-containing grains and roughage.

Preliminary Experiments with Amorpha Fruticosa on Cattle Grubs

H. I, FEATHERLY, Ph.D., and KARL S. HARMON, D.V.M.

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CAT WILLOW (Amorpha fruticosa L.) is a leguminous shrub, three to eight feet tall, with odd-pinnate leaves consisting of nine to twenty-five oblong to broadly elliptical leaflets. The small purplish flowers are densely borne on a cluster of spikelike terminal racemes on new wood. The pods are usually one-seeded, indehiscent, curved, 6 to 8 mm. long, and more or less covered with glands or resinous blisters. The blossoms appear in May and June while the fruit matures in the fall and remains on the plant throughout most of the winter.

The plant is native throughout central North America from Pennsylvania to the Rocky Mountains and from Manitoba to Mexico. Its natural habitat is along stream banks, and in ravines and moist places. In recent years, it has been used somewhat as an ornamental plant and, as such, has shown adaptability to a wide range of habitats.

Amorpha fruticosa is known to contain a material that is very poisonous to certain species of insects. Investigations are under way at Oklahoma A. & M. College to determine against what insects it is specific. The poisonous principle is found in both the roots and fruit of the plant, but by far the greater amount is found in the fruit. The fruit was the part used in the experiments.

The best known place to break the life cycle of the cattle grub is in the late larval stage while the larvae are still in the back of the animal and after the openings in the skin have been made. To kill the larvae, it is necessary that some of the insecticide gets into the holes on the animal's back. This method offers only a delayed relief to the infested animals since the larvae have done most of their harm before being killed. However, since the fly does not migrate far, farmers by concerted action in treating their cattle are able to reduce the fly population the following season and may be able to exterminate it completely over wide areas.

From the Departments of Bacteriology, Physiology, Veterinary Science, and Botany and Plant Pathology, Oklahoma A. & M. College.

EXPERIMENTS

Two experiments were conducted at Oklahoma A. & M. College to determine the value of the Amorpha material as an insecticide for cattle grubs. The fruit of the plant was coarsely ground and extracted with acetone, in a Soxhlet extractor, for twenty-four hours, after which the excess acteone was distilled off. The extract from 100 Gm. of the fruit was then diluted to a liter with distilled water. This gave a 10 per cent. emulsion. The extract which contained some acetone formed a permanent, creamy-white emulsion with the water. This was massaged into the infested area of the animal's back. It is necessary that some of the liquid enters the openings through which the grubs receive air.

Experiment 1.—Four steers were selected for this experiment. They were steers that were also being used for feeding trials and as such were confined to stanchions during the entire time of the experiment. The estimated number of grubs in the respective animals was as follows:

Steer	1		*								70
Steer	2				0						30
Steer											
Steer											

The strength of the stock emulsion used was 10 per cent. The different strengths applied, the dates, and the results are given in the following data:

12-20-43.—150 cc. of material diluted to 500 cc. and applied to the back of each animal. This made a 3 per cent. solution of the extract.

12-28-43.—2 dead grubs and 2 live ones expressed from steers 1, and 2.

1-5-44.—A small amount of liquid soap was added to 150 cc. of the material. This was in turn diluted to 500 cc. and applied to the back. One live grub expressed from steer 1. Grubs appeared in general unaffected by the treatment.

1-17-44.—One live grub expressed from back of each of the 4 steers.

1-18-44.—500 cc, undiluted (10%) material (no soap added) applied to back.

- 2 dead grubs expressed from steers 1, 2, and 3. 2 live grubs expressed from steers 1 and 4.
 - 1-24-44.—5 dead grubs expressed from steer 1,
- 1 dead grub expressed from steer 2.
- 1 dead grub expressed from steer 3.
- 2 live grubs expressed from steer 4.

1-29-44.—Several grubs examined in the back of each steer. All were dead.

2-7-44.—All grubs appeared dead. Many were gone, and lesions were healing.

The concentration of the liquid was increased when the weaker liquid produced no ill effects on the grubs. A small amount of soap was added to the liquid in one application as a wetting agent. The soap apparently changed the emulsion to a solution and lessened the toxicity of the material.

Emulsions under 10 per cent gave poor

Another wetting agent may be found that will not affect the toxicity.

Massaging the individual pores with the emulsion will conserve material on lightly infested animals, time and cost of material being elements to consider.

One application of the 10 per cent emulsion seems sufficient to kill all of the grubs

TADLE: 1

TABLE 1					
ANIMAL	TREATMENT	DATE	INFESTATION	OBSERVAT LIVE GRUBS	DEAD GRUBS
310	10% solution	2/9/44	1 grub removed 4 to 6 grubs		All dead
of dam 91 (Blackbird)	10% solution	2/9/44	3 grubs		3 dead
315	10% sol. + soap	2/9/44	1 grub removed 6 grubs	1 alive	3 dead
312	10% sol. + soap	2/9/44	10 grubs	2 alive	7 dead
Brown of dam S-30	5% solution	2/9/44	5 grubs	3 alive	2 dead
(White) 307 (S)	5% solution	2/9/44	3 grubs	1 alive	2 dead
305	5% sol. + soap	2/9/44	1 grub		ot locate
32 Hereford	Check			7 alive	None dead
Shorthorn 34 heifer	'Check			6 alive	None dead
Chain 6 Angus	Check			3 grubs go	one
Angus	Check			3 grubs go	ne

From the foregoing data, it appears that the 10 per cent. solution without soap gave the best results, while the weaker dilutions were less effective.

Experiment 2.-It was planned to use 10 yearlings in this experiment, using 2 for each of four solutions, leaving 2 for checks. A herd of 13 animals was brought in for treatment. Six of the 13 proved to be free of grubs, leaving only 7 for treatment. As this was 3 animals less than were needed, it was decided to use 3 yearlings from another lot for checks. These 3 were not examined the day that the others were treated, but were examined at the end of the experiment.

The same stock solution (10%) was used in this experiment as in the preceding one. The following table gives the data obtained in this experiment.

CONCLUSIONS

Too few animals were used for one to arrive at final conclusions.

The 10 per cent emulsion gave very promising results with all grubs killed on the animals treated.

The 10 per cent emulsion with soap as a wetting agent did not give as effective results.

that have made pores through the hide of the animal. It will not injure the ones that have not yet punctured the hide. Three applications, if timed properly, should be sufficient to rid the animal of grubs.

Killing the grubs does not offer the animal immediate relief, but it will reduce the fly population the following season. Since the flies do not migrate very far during their lifetime, farmers or ranchers in a community, by concerted action, could practically eliminate the fly in that region, if all treated their cattle.

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Synthetic Urea in the Cow's Ration

Synthetic urea $(= CO(NH_2)_2)$, or diamid of carbonic acid, which in its natural form is a well-understood by-product of protein decomposition in the living body, is destined to get as much attention in the feeding of dairy cows, as in the study of physiology. Fed at the rate of 0.3 lb. per day, mixed in the grain ration or silage, compared favorably to soybean meal for milk production. Used at that rate to step up the food value of oat hay, corn silage, and bonemeal, investigators of the U.S. Bureau of Dairy Industry, USDA, show synthetic urea produced as much milk as the same feed supplemented with soybean meal. There is no advantage of mixing the urea with silage instead of with the concentrate. The cost is about 1 cent a day per cow (The Country Gentleman, Sept. 1944). The subject is discussed comprehensively in the Nutrition section of the September issue of the JOURNAL.

Vitamins in Large Doses as Drugs

The use of vitamins medicinally in doses far in excess of, and apart from, the normal nutritional requirement is a new departure in drug therapy. The potency of vitamins in tiny doses has naturally attracted the attention of pharmacology, the source of our knowledge of pharmacodynamics. The curiosity of the pharmacologists in the remarkable physiological action of these trace catalysts was naturally aroused when vitamins and vitamin fractions were synthesized and made available for exact dosagein other words, when vitamins became drugs. The dynamics of large doses of vitamin C in the form of ascorbic acid and salts of that acid have been found to be comparable to the complex action of mercurial diuretics on the osmotic pressure of the blood, whereby the lymph or edema is transferred back to the blood vessels and the volume of urine excreted is increased twoto threefold. Whether vitamin C will become the popular substitute for salvrgan in Bright's disease is less important in veterinary medicine than its action on a process as vital as the mutual transfer of plasma and lymph. Vitamin D, likewise, in doses of 45,000 to 110,000 I.U. per kilogram of body weight daily, has an action entirely remote from its nutritional function, and one may well wonder if the curative action of vitamin A in bovine and ovine ketonemia recently reported in the literature is due solely to correcting a deficiency. The quick response seems to point to an action apart from the normal function of carotenoids. In extreme vitamin A deficiency (as edema indicates), there is a plasma-lymph aberration to set in order. Moreover, the action of large doses or longtime overdosing of vitamin A remains to be demonstrated in domestic animals. Briefly told, the action of essential vitamins in doses far beyond the normal nutritional needs is still in the field of experimentation—a broad field which the pharmacologists are exploring from the knowledge the nutritionists have supplied .-L. A. M.

Copper and Nicotine Sulfates Plus Phenothiazine in Salt: A Controlled Trial*

Of two flocks of sheep treated with copper and nicotine sulfates in solution and allowed coarse, untreated salt, one flock was held as the control unit while the other flock was given access to phenothiazine-salt, 1:15, as a follow up treatment. The control unit consisted of 19 ewes and 19 of their lambs; the phenothiazine-salt-treated unit had 39 Both units ewes and 40 of their lambs. were drenched with the copper-nicotine solution early in July and again early in Account was taken of the kind of worms, egg counts, and hemoglobin values during the trial. Summed up, the result was a significant reduction in scours, diarrhea, worms, and intestinal nodules, in the group that received phenothiazine and the salt allowance.

Experiments conducted at the University of Wisconsin would indicate that there is little likelihood of farm animals developing boron deficiency,

^{*}Martin, Ansel R.: The Anthelmintic Efficiency Against Sheep Nematodes of Copper-Nicotine Sulfate Alone, and Copper-Nicotine Sulfate in Conjunction with Phenothiazine in Salt. Cornell Vet., 34, (July, 1944): 241-247.

The Terms "Cadaver" and "Carcass" in Dressed Poultry Inspection

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Since veterinarians are engaged more and more extensively in food inspection, it would seem desirable to adopt a consistent terminology in connection with the use of the terms "cadaver" and "carcass" in dressed poultry inspection. In ante- and postmortem poultry inspection, divers conditions are met routinely that require designation.

Dorland (1930) defines "cadaver" as the human body after death, a corpse. And, he defines "corpse" as a cadaver, a lifeless body. Webster (1936) defines "cadaver" (L. cadere to fall), and "corpse" (L. corpus) as the dead body of a human being, or anything divested of life. "Carcass" (It. carcassa, shell), according to Webster, is the dead body of man or beast; used contemptuously in referring to the human being and figuratively in reference to nonliving things (ships, buildings, furniture).

Hemenway, H. B. (1936), under "Law versus Policy" states that dead animals and garbage never have property value but explains that a tuberculous animal "if killed" may be used for ordinary purposes with "very slight exception," meaning that the term "carcass" in that case applies directly to human food.

From these definitions, it is evident that in proper usage, "cadaver" refers to the once living human body which, in general, has no commercial value, and the definitions all sum up to the term "dead body," which in no way refers to food.

Crocker, W. J. (1917), defines veterinary postmortem technique to be "the systematic exposure and critical examination of a 'cadaver' for the study of pathologic changes. . ." He speaks of "cadavers" being removed to reduction plants soon after death, and gives directions for positioning the "cadaver" and other steps (selecting, packing, and sending specimens). There is no reference to the use of the "cadaver" for food. It is assumed the animal died of disease. Meat inspectors hold autopsies on "carcasses" of animals slaughtered for food purposes but not upon "cadavers," dead of disease or injury. Animals not slaughtered according to approved

methods and carcasses under investigation may fall into the meat inspector's hands. In all instances, these examinations come into the field of meat inspection.

Mohler, J. R., Eichhorn, A., and Edelmann, R. (1933), writing exclusively on meat inspection, repeatedly refer to the body of meat-producing animals slaughtered intentionally for food as "carcasses." [emergency slaughter]. Under the title "dead animals," they write of animals being dressed after they have died [from disease or injury] and of attempts to give them the appearance of slaughtered animals (cold slaughter). In that event, the meat of a nonslaughtered animal sometimes appears for inspection. According to regulations [American], the meat of "dead animals" is not regarded as fit for food, on account of putrefactive changes and, therefore, is not classified as carcasses for food purposes.

In the light of these literal definitions, it is my opinion that any organism, mammal or bird, killed and prepared under approved regulations, whose body is to be used for human food, should be designated a "carcass." On the other hand, when the same organism has died of disease or injury and, therefore, is destined for reduction (tankage, fertilizer, burial, etc.), its body should be named a "cadaver." It is proposed that this classification be adopted for use in dressed poultry inspection.

Botulism in Mink

E. R. Quortrup, D.V.M., of Fish and Wildlife Service, USDI, described two outbreaks of botulism in mink on fur ranches. The one was due to mixing the meat of a calf that had died from pneumonia with wholesome meat as mink feed, and the other outbreak from feeding frozen blocks of horse meat shipped from Idaho to Utah which, obviously, was toxic when frozen. The losses were 200 mink out of 5,000 in the second instance and 461 mink out of an approximate 500 in the first outbreak.—From The Fur Journal, July, 1944.

NUTRITION

MATERIAL FURNISHED BY THE COMMITTEE ON NUTRITION

Symptoms of Nutritional Deficiencies in Chickens and Turkeys

(Excerpts from Recommended Nutrient Allowances for Poultry, which is a report, dated June, 1944, of the Committee on Animal Nutrition, National Research Council.)

The more common gross pathological symptoms that are seen in poultry maintained on diets deficient in the various nutritional factors are herein described. One shortcoming of such a description is that the symptoms are observed, for the most part, in poultry fed rations severely deficient in some specific factor. Under these conditions only the acute symptoms develop, which, in most cases, are quite characteristic for each nutritional factor, thus making a diagnosis relatively easy. On the other hand, the gross symptoms observed in case of a chronic deficiency of any one of several factors may be similar (perhaps only retarded growth, ruffled plumage, etc.), thus making an accurate diagnosis difficult if not impossible. The chronic deficiency may be more serious in the long run than the acute, since in the latter case diagnosis and treatment may be readily obtained while the chronic deficiency continues to exist because of failure to diagnose it.

VITAMIN A

On a severely deficient diet the symptoms of vitamin A deficiency begin to appear in approximately three weeks. Growth is markedly retarded, the chicks show general weakness, emaciation, staggering gait, and ruffled plumage. Resistance to infection is reduced and mortality is increased. The secretions of the intestinal mucous glands, the tear glands, and the salivary glands fail. An opaque appearance caused by keratinization of the third eyelid may be observed. Infection may occur, resulting in the production of a viscous fluid which may cause the eyelids to stick together.

Pathological lesions observed on autopsy are confined largely to the mucous membranes of the mouth, pharynx, esophagus, respiratory and urinary systems. Creamy white pustules often are found on the roof of the mouth and along the esophagus, sometimes extending into the crop. Ureates accumulate in the ureters and in the kidney tubules so that these organs are enlarged and creamy white in color. This ureate accumulation is detected easily on gross examination because of its whitish appearance.

In mature fowl the symptoms noted for chicks may develop much more slowly, but the eye disorder often becomes more acute. A cheesy exudate from the eyes often is observed, as well as a sticky discharge from the nostrils. Egg production and hatchability are markedly reduced.

The symptoms of a vitamin A deficiency in turkey poults are, in general, similar to those described for chicks, but are usually much more acute.

VITAMIN D

A lack of vitamin D in the absence of direct sunlight results in the nutritional deficiency termed rickets. The chicks are retarded in growth, show a disinclination to walk, or walk with a lame, stiff-legged gait, and have an ungainly manner of balancing the body. The chicks appear generally unthrifty. In this disorder, an upset occurs in the mechanism involving the absorption and retention of calcium and phosphorus, as a result of which these minerals are not deposited in normal amounts in the bony structure of the body. Abnormal bone development may be detected most readily in the legs, and at the junction of the ribs on the sides of the breast. The spinal column may be curved and the sternum usually shows acute lateral bending or depression. Enlargement of the hock joints and beading of the rib ends become apparent. The

beak is soft and rubbery and may easily be bent.

Inasmuch as vitamin D is concerned in calcium and phosphorus absorption and retention, a deficiency of either of these mineral elements may cause symptoms somewhat similar to those described for vitamin D. Grossly the symptoms may not be distinguishable one from another, except that the legs appear normal in case of a phosphorus deficiency. Under practical conditions, however, vitamin D is the factor usually lacking, because a deficiency of calcium or phosphorus hardly ever becomes so acute as to bring about these symptoms.

In mature laying birds the first symptoms of a vitamin D deficiency is the laying of thin-shelled eggs, followed very shortly by decreased egg production. The breast bone becomes soft and rubbery and the bones of the legs and wings become fragile and easily broken. Birds may lose temporarily the use of their legs and squat in a "penguin-like" manner, a symptom which sometimes has been called "egg paralysis." Hatchability is reduced markedly.

The symptoms of a vitamin D deficiency in turkeys are very similar to those described for chickens.

VITAMIN B,-THIAMIN

Day-old chicks when placed on a thiaminlow ration develop polyneuritis within nine to twelve days. In the acute stage of polyneuritis the head may be drawn over the back. Diets containing suboptimal amounts of thiamin, when fed to chicks lead to loss of appetite, emaciation, impairment of digestion, general weakness and frequently convulsions.

The symptoms of the thiamin deficiency in mature birds and turkeys are similar to those described for chicks.

RIBOFLAVIN

A lack of riboflavin in the diet of young chicks results in diarrhea, retarded growth, and paralysis of the legs, sometimes called nutritional leg paralysis. It involves the legs and feet and occurs in two stages, a preliminary stage which is curable, and an acute stage which is incurable. Nutritional paralysis is characterized by the sudden appearance of chicks walking on their hocks, with toes curling inward; otherwise the chicks appear to be in excellent health. Chicks receiving rations only partly deficient in this factor often recover spontane-

ously. The severe cases of the paralysis show very marked hypertrophy and softening of the brachial and sciatic nerves which are usually discernible by inspection. The symptoms are most pronounced and most often observed in the sciatic nerve. The nerves occasionally reach a diameter of four to five times the normal size.

JOUR. A.V.M.A.

In breeding birds a deficiency of riboflavin results in poor hatchability. The requirements for hatchability are considerably higher than those for egg production and maintenance of health. The embryos that fail to hatch as a result of a riboflavin deficiency are dwarfed, show a high incidence of edema, degeneration of the Wolffian bodies, and a characteristically defective down development, termed clubbed down. On a ration moderately deficient in riboflavin, many embryos die during the second week of incubation. The mortality reaches a peak at about the eleventh day of development.

PANTOTHENIC ACID

A pantothenic acid deficiency in young chicks results in retarded growth, and feather development is extremely ragged. Within twelve to fourteen days, a pellegralike syndrome develops. The eyelids become granular and stick together as a result of a viscous exudate. Crusty scabs appear at the corners of the mouth and around the vent. Dermatitis of the feet sometimes is observed in pantothenic acid deficiency though the lesions are seldom as severe as those brought about by a biotin deficiency. Liver damage and changes in the spinal cord may be seen on postmortem examination.

Lesions in adult fowl similar to those of growing chicks have not been observed although a deficiency of pantothenic acid results in lowered hatchability.

NICOTINIC ACID (NIACIN)

A deficiency of nicotinic acid in the diet of chicks results in "black-tongue," a condition characterized by inflammation of the tongue and mouth cavity. Beginning at about 2 weeks of age the entire mouth cavity of the deficient chick as well as the upper part of the esophagus becomes distinctly inflamed with a deep red color in contrast to the normal pink of the healthy chick. Growth is retarded and feed consumption reduced. Poor feather development and, occasionally, scaly dermatitis of

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the feet and skin are also observed.

Nicotinic acid has not been shown to be essential for adult fowl.

PYRIDOXIN (VITAMIN Ba)

Chicks fed a pyridoxin-deficient diet show a small initial gain, then cease to grow or grow very slowly. Some chicks show abnormal excitability and, somewhat later, jerky convulsive movements. Chicks suddenly may run about aimlessly, often flopping their wings and keeping their heads down. Later convulsions occur. During these convulsions, the chick may rest on its breast, raise its feet off the floor and flop its wings. Chicks may fall on their sides or roll over on their backs and rapidly paddle their feet. The head often jerks up and down or retracts as in polyneuritis and sometimes moves convulsively in an up-and-down movement with the neck distended or twisted. Complete exhaustion follows one of these convulsions and is frequently fatal.

Pyridoxin deficiency in mature birds is characterized by loss of appetite, followed by rapid loss of weight and death. Egg production and hatchability are reduced markedly.

CHOLINE

A lack of choline in the diet of young chickens and turkeys results in retarded growth and perosis. (See Manganese.)

Choline deficiency in mature birds has been reported to result in increased mortality and lowered egg production with an increased abortion of egg yolks from the ovaries.

BIOTIN

Biotin deficiency in chicks results in a dermatitis somewhat similar to that observed with pantothenic acid deficiency.

Lesions first appear in about three weeks, although considerable variation in time of appearance has been noted. The bottoms of the feet become rough and calloused and may be severely affected before mandibular lesions are apparent. As the syndrome progresses the entire bottom of the foot becomes encrusted and hemorrhagic cracks appear. The toes may become necrotic and slough off, but the top of the foot and leg usually show only a dry scaliness. The mandibular lesions which first appear in the corners of the mouth spread to include the area around the beak, and the eyelids

eventually become swollen and stick together. In contradistinction to these symptoms, the lesions in pantothenic acid deficiency are first evident in the corners of the mouth and eyes, and only in extreme cases do the lesions of the feet become so severe.

Biotin has been reported to be one factor necessary for the prevention of perosis in chicks and turkeys. Turkey poults exhibit symptoms very similar to those described for chicks when fed a biotin-deficient ration.

Feeding mature fowl a biotin-deficient ration causes reduced hatchability while egg production is not adversely affected, indicating that the requirement for the production of hatching eggs is much higher than that necessary for maintenance of good health and egg production. In hens, no dermatitis similar to that of chicks fed biotin-deficient rations has been observed.

CALCIUM AND PHOSPHORUS

Calcium, phosphorus, and vitamin D are closely interrelated in bone formation. A deficiency of any one of these results in rickets, although the blood picture may vary depending on the factor that is lacking. Retarded growth and increased mortality are also symptoms of calcium and phosphorus deficiency.

MANGANESE

A manganese deficiency in the diet of growing chicks and poults results in perosis or slipped tendon. As has been mentioned, perosis may be caused also by a deficiency of choline or biotin.

Perosis is a malformation of the bones of chicks. The symptoms usually observed are swelling and flattening of the hock joint with subsequent slipping of the Achilles tendon from its condyles. The tibia and tarso-metatarsus may exhibit bending near the hock joint, and lateral rotation. One or both legs may be affected. A shortening and thickening of the long bones of the wings and legs is also observed. The disorder, in so far as manganese is concerned, is aggravated by excessive quantities of calcium and phosphorus in the ration.

In laying and breeding birds, a manganese deficiency results in lowered egg production, egg shell strength and hatchability. Numerous embryos that die as a result of manganese deficiency exhibit chondrodystrophy, a condition characterized by a parrot-like beak, wiry down, and shortening of the long bones. This condition is not, however, specific for a manganese deficiency.

MAGNESIUM

When fed a diet deficient in magnesium, chicks grow slowly for about one week, then cease growing and become lethargic. When disturbed, they exhibit similar symptoms to those of other species fed diets deficient in magnesium. Chicks show a brief convulsion, then go into a comatose state which sometimes terminates fatally but usually ceases in a few minutes.

IODINE

A deficiency of iodine in the chick's diet results in goiter. The thyroid gland increases to many times the normal size. Histological examinations of the enlarged thyroid glands show an absence of colloid and a hyperplasia of the living cells of the follicle.

IRON AND COPPER

A deficiency of iron or copper in poultry rations results in anemia. Recently, a vitamin has been reported as being essential for the prevention of anemia in growing chicks.

CONCLUSION

Very probably some of these pathological symptoms will never appear under practical conditions. On the other hand, deficiencies of vitamin A, vitamin D, riboflavin, and manganese may often appear among growing chicks and breeding hens.

Potatoes for Horse Feed

Potatoes cut up, mixed with chaff or other dry roughage, and dampened with molasses, make up an appetizing feed for horses that keeps them looking well, according to articles in *Horse and Hound*, London, cited by *Blood Horse*, the organ of the American Thoroughbred Breeders Association. From 12 to 19 lb. of potatoes daily, raw or cooked, kept both horses and cows in the best of health. "In four years, I have not had a case of colic," one of the authors adds.

Incompatibilities among drugs used in medicine have received much attention for many years, but incompatibilities among feed stuffs have only recently been given intensive study. Some of the striking examples of the latter are:

 Bone meal, dried skimmilk, dried whey, and ground oyster shell, each will destroy vitamin D, when mixed with it in feed

2) Mineral oil dissolves vitamin A and takes it out of the body.

3) Avidin, found in egg white, inactivates biotin.

4) Charcoal may oxidize several of the vitamins, especially vitamin A, riboflavin, and vitamin K.

Legends for Pictures on Opposite Page

I—Veterinary personnel examining onions and potatoes at a Quartermaster breakdown point of a general depot in Great Britain, before issuing the consignment to various units. In the picture are Lt. Joseph O. Simington, Danville, Pa., the depot veterinarian; Sergeant James A. Turner, Aberdeen, Wash.; Sergeant Delbert Achey, Bethlehem, Pa.; and Corporal Theodore Johnson, Duluth, Minn., veterinary technicians.

2—Guard dogs are trained to protect U. S. Military installations in England. The medical care and health inspection of these dogs is a Veterinary Corps function. The picture shows Major Robert C. Fuller, V.C., Quitman, Ga., inspecting, and Military Policeman Pfc. Fred Lay, Newville, Pa., holding an English Alsatian guard dog in the course of the training process.

3—Quartermaster troop at a U. S. Army general depot in England. The stacking and storing of the food supply articles are directed by the veterinary officers of the station.

4—Nonveterinary? Guess again. These are veterinary officers and technicians operating the gas decontamination section of a large meat and dairy depot in England. They are checking the equipment before making a demonstration trip. The persons shown are Corporal Joe Dawkins, Alhambra, Calif., veterinary technician; Lt. Abraham L. Schwartz, Huntingdon, Pa., assistent depot veterinarian; and Corporal Frank L. Bures, Des Moines, Ia.

5—Here is an inspection of cheese at a U. S. Army refrigerating plant in England. At the left is Capt. L. J. German, St. Louis, Mo., district veterinarian; Lt. Donald O. Todd, Delta, Ohio, depot veterinarian, and his assistant Lt. Milton E. Becker, Ithaca, N. Y., are at the right.

6—Here is Veterinary Technician Corporal Urban J. Goeke, of Dayton, Ohio, personally removing ice cream from the freezer at an important port headquarters in England. The Corporal also supervises the manufacture of this indispensable American dessert for distribution to the troops of the port area.

Veterinary Science in the War



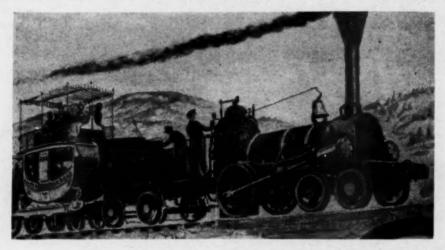
-From Signal Corps Official Report

EDITORIAL

That Approaching Horseless Age

THE AGE of wishful thinking about the coming of a no-horse America was born when the Baltimore & Ohio, in 1837, built "The Lafayette," the presidential special of Martin Van Buren, and when the Union Pacific, in 1869, held a party at Cheyenne

mule are on the firing line of World War II. You've read the jeering dispatches about the Germans glutting the roads with horse-drawn vehicles in Normandy, and of the Russian cavalry divisions, 80 of them, we're told, on the eastern front; and you've heard



-From an old print

Fig. I—Predictions about the horseless age began with "The Lafayette," luxurious coach said to have been built for President Martin Van Buren by the Baltimore & Ohio Railroad in 1837.

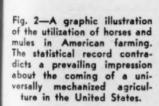
to drive the golden spike that was to bind the country with steel rails. But the anguish of the parturition did not reach its climax until the turn of the century, when chugging automobiles began to frighten horses on the cobbled streets and dusty highways. Although the hypothetical prediction is "old stuff" in the annals of veterinary medicine, the fact remains that the "passing of the horse" in the year 1944 is still a popular headline in the public press and a topic for debate in the veterinary profession. As a matter of fact, running rings around the Nazi's with jeeps and tanks and motorized cannons and aircraft reopens the question. More than ever, this genus of domesticated mammal is threatened with theoretical extermination. One has a deuce of a time digging for proof that the horse and the of our Veterinary Corps having nothing to do outside the service of sustenance. The ratio of animal- to manpower in the present field armies must wait until the war is over for the counting of noses.

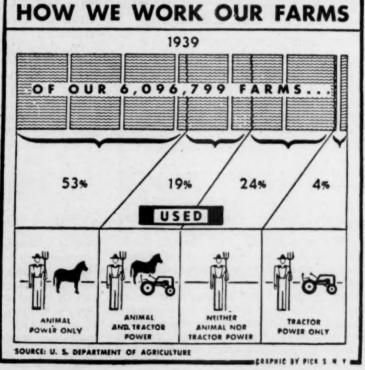
Anyhow, the theme of this essay is the horses of the civilian front—horses of sport, pleasure, and farming; in other words, the entertainers and the food producers. Classified as to use, these two classes can be broken down into sundry categories (field, wagon, buggy, stage, saddle, family, etc.) well known to the horse-minded reader. In the long list of uses to which civilian horses have been put through the years, only two categories have vanished: public-service horses in interurban and intraurban travel (stage, canalboat and streetcar), and the power horses of the old threshing machine

and treadmill. Admittedly, this bit of interim economics is pretty old and hackneyed for a veterinary journal but dramas are generally introduced with an explanatory prologue. To round out the text, we reprint the drawing, used last month to illustrate the editorial titled "The Marvels of the American Farm," which shows that 53 per cent of over 6 million farms are "all horse," 19 per cent mixed, and but 4 per cent "all tractor" (see, fig. 2). Nothing more need be said on the over-all importance of horses in producing the food and fiber for our 130 million consumers.

But, if bare statistical records have their dissidents, isolated facts are not that easy to rule out—such, for example, as the string of draft, farm geldings exhibited at the Wayne County (Ohio) Fair in September (fig. 3), the photograph of which was sent to the JOURNAL by the Wooster (Ohio) Daily Record. An analyst of American agriculture once named Wayne County one of the three best farming counties in the United States. The other two were Lancaster County, Pennsylvania, and McLean County, Illinois. Wooster, in the heyday of the draft horse, was the home of Bell Broth-

ers, who made Percheron history in the United States for many years. Their exhibit at the International was always tops. A son, Major Bell, was a prominent remount officer of the A.E.F. of World War I, and George Potts, once Bell Brothers' chief écuyer, and widely known in the Percheron whirl, has just been awarded the annual Honor Groom Trophy of the Percheron Association of America. These are sidelights mentioned as background for the meaning of the picture of horses where farms are farmed. Veterinarians need not be reminded that in Wayne County, touching Wooster, lies the Ohio Agricultural Experiment Station where, years ago, Forbes and coworkers made brilliant discoveries in animal nutrition. It was also the home of the late W. F. Derr (Ont. '76), said to be the first graduate veterinarian to locate in a rural Ohio district. Amid good farm horses, good farmers, and good horsemen, his practice was extraordinary for those early days. His son-in-law is none other than Prof. John F. Hutton (O. S. U. '11), of Michigan State College. Note the three vertical figures in the foreground of the picture. What these descendants of a long





lineage of horsemen don't know about horsemanship isn't worth writing in the book of experience. The picture tells an important story of farming in its highest estate and, there, exhibited at the county fair, is the motor power used. It is, therefore, not amazing that the banks of Wooster stood

Value of race horses	55,000,000
Value of breeding farms	20,000,000*
Value of feed-producing farms	10,000,000
Daily betting at Belmont	3,562,771

^{*}Exclusively breeding farms.

The report adds that the betting would



-Wooster (Ohio) Daily Record staff photo.

Fig. 3—String of draft, farm geldings exhibited at the Wayne County (Ohio) Fair in September, 1944.

An exhibition of excellent farm horses symbolizing the motor power employed in a county having a national reputation for good farm practices.

the panic of '29 like so many Gibraltars. None closed, none had anything to fear. The farmers used horses. None of this is beside the point under discussion.

AMONG THE THOROUGHBREDS

Accustomed as it is to big figures, the Wall Street Journal seems startled at the ciphers it takes to make up a balance for the boys at Belmont Park and parts west. Besides the estimated \$1,000,000,000 that passed through the parti-mutuel betting machines this year, the following figures are entered:

Money bet in 1943..........\$703,000,000 Value of race tracks....... 75,000,000 skyrocket much higher but for the crowding at the betting windows at the last moment. The average would be \$4,000,000 daily (at Belmont) every racing day but for the crowding.

To these gleanings, here and there, one may add from current news items the new interest in light-harness racing at the meetings of the Grand Circuit and county fairs, the strings of park hacks on the bridle paths, the effectives of the hunt clubs, and the heavy-harness and gaited horses of the show ring, all of which make up a huge capital investment, proving that the horse is not a passing farm animal. There is no horseless age approaching.

Canada Restricts Entry of Dogs from U. S.

On September 1, 1944, Dr. M. Barker, Veterinary Director General of Canada, advised transportation companies, district and boundary veterinary inspectors, and others of a new ministerial order promulgated by the Department of Agriculture at Ottawa, which places severe restrictions on the entry into Canada of dogs from the United States. The order, which went into effect on September 15, 1944, requires a certificate stating that dogs, for entry into

Canada, have been inspected and found free from any symptoms of contagious disease, have not been exposed to rabies nor kept, for a period of six months preceding shipment, within a radius of fifty miles of any case of rabies.

Certificates may be made by an accredited veterinarian but must be endorsed by a federal B.A.I. inspector who is authorized to issue or endorse certificates covering animals destined for shipment to

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Canada. The Ministerial Order (No. 59) reads as follows:

Under and by virtue of the authority conferred upon me by Section 17 of the Animal Contagious Diseases Act, Chapter 6, R.S.C., 1927, I do hereby order that:—

All dogs for entry into Canada from the United States shall be accompanied by a certificate signed or endorsed by a veterinary inspector of the United States Bureau of Animal Industry certifying that the dogs have been inspected and found free from any symptoms of contagious disease; that the animals have not been exposed to the infection of rabies, and that no case of rabies has occurred within a radius of fifty miles of the place in which the dogs have been kept for a period of six months immediately prior to date of shipment.

Performing dogs entered for temporary stay and kept under direct control while in Canada shall be exempt from this order.

This order becomes effective on and after September 15, 1944.

Dated at Ottawa this twenty-ninth day of August, one thousand nine hundred and forty-four.

s/H. BARTON, Deputy Minister, Department of Agriculture, Ottawa, Canada

In advising federal inspectors in the United States concerning the order, B.A.I. Chief A. W. Miller sent out a circular letter (No. 2686) under date of Sept. 12, 1944, which reads, in part, as follows:

There is inclosed a copy of Ministerial Order No. 59 of the Department of Agriculture of Canada governing the entry into that country of dogs from the United States, which became effective Sept. 15, 1944. The inspection called for in this order may be made by an accredited veterinarian but his certificate must be endorsed by a Bureau inspector whose name is on the list, furnished the Veterinary Director General of Canada, of those authorized to issue or endorse certificates covering animals destined to that country. The same is true if the inspection and certification are accomplished by a Bureau inspector whose name is not on the said list.

Because of the appearance of rabies from time to time in practically all parts of this country the matter of endorsing certificates containing the statements required by Ministerial Order No. 59 should be very carefully considered in each individual instance. Endorsement should be withheld unless the authorized Bureau veteri-narian is in a position to have definite knowledge that no case of rabies has been reported for more than six months in a region extending beyond a radius of 50 miles from the premises of origin. It is realized that these requirements will operate to prevent certification except in comparatively rare instances.

[Veterinarians whose clients may seek to send dogs to Canada should be aware of, and pay strict attention to, the limitations of the order. No relaxation of the order or concession on account of antirabic inoculation is in prospect. Performing dogs accompanying theatrical troupes or side shows are exempt but all others, including hunting dogs, must be properly certified or they will be turned back at the border. This has already happened in several instances.—Editors.]

DDT Not Universally Effective

The much touted louse powder and insect spray, DDT, must not yet be thought of as a universal insect spray for agricultural purposes. It is injurious to certain plants, livestock, honey bees, wildlife, birds and fishes, and is toxic for man when consumed in undetermined amounts with sprayed vegetables and fruits. Moreover, DDT has not been produced in sufficient quantity to make large-scale tests of its precise behavior, according to an announcement by Chief Annand of the Bureau of Entomology and Plant Quarantine, as of June 28, 1944. In using DDT to destroy insects in rooms, ground, airplanes, etc., users are warned to learn the known facts about this new insecticide.

Corrigendum—Near the end of the article "Chinese vs. American Hogs" (September Journal, p. 133) the sentence reading, "The gilts are usually bred at 5 months and generally Chinese sows farrow their first litter at 6 months" should read, "The gilts are usually bred at 5 months, but sometimes they are bred to farrow at ages as young as 6 months."

Honors Dr. Beaudette

The achievements of veterinary science as a fundamental instrument in the advance of mankind was again recognized when Dr. Fred R. Beaudette (K.S.C. '19), professor of Poultry Pathology, Rutgers University,

Dr. Fred R. Beaudette

New Brunswick, N. J., won the 1944 Borden Award in Poultry Science for major research in poultry pathology. The citation, as declared in Poultry Science, commemorates, in particular, his work on "laryngotracheitis and related respiratory infections; the immunizing value of eggpropagated virus; and equine encephalomyelitis in avian hosts"; and further points out "the stimulating influence which his comprehensive interest in, and enthusiam for, research has had on other workers in the field of poultry pathology." We pause to congratulate both donor and recipient of this award—the one for signalizing the nation's debt to poultry pathologists and the other for having aided in bringing that branch of knowledge to the attention

of a vast food-producing industry. Here's also the opportunity to express the faith that the JOURNAL has always had in Beaudette contributions. They are shots well aimed to hit the bull's eye of important targets.

Epic Task in Sudan, and Elsewhere

The report of a British veterinarian's experiences in pursuit of his duties in Southern Sudan (Veterinary Journal, July, 1944) is a revealing saga of grave diseases—rinderpest, pleuropneumonia, foot-and-mouth disease, trypanosomiasis—prevalent among the cattle of native tribesmen at inaccessible places. Half of the natives refuse to cooperate or oppose the use of scientific measures of control. And there is the problem of meager supplies of serums and vaccines furnished to carry on.

Commenting calmly on the gruesome situation described, the editor writes the moral: "We must bear in mind the education of the owners of livestock, for, no matter how far our studies may progress, no matter what recommendations may be made, the appreciation of the situation must be brought home to the owners before we can hope for improvements." And, so goes veterinary service everywhere. In the United States, where we did not first educate the "tribesmen," our dipping vats were bombed and our inspectors were chased off the farm with pitchforks.

Fast Milking—Complete Milking

Commenting on the benefits of fast milking to prevent udder troubles, Hoard's Dairyman points out that the immortal Babcock recommended rapid milking in lieu of slow milking in 1889. Most certainly, the object in good milking technique is to persuade the cow to get in the receptive mood to "let down" her milk (Peterson) and then milk her clean without delay. One recalls the checked trials of Schalm and Mead, University of California, demonstrating that fast milking if done at the expense of complete milking would be a greater evil than slow milking The inflammatory process of infected udders is accentuated after incomplete milking or incomplete stripping after machine milking.

CURRENT LITERATURE

ABSTRACTS

Vitamin B Complex

The three most widely used fractions of the vitamin B complex are thiamin (\pm vitamin B₁), riboflavin (\pm vitamin B₂) and niacin (\pm nicotinic acid).

Thiamin hydrochloride is a white, crystalline substance, readily soluble in water and possessin a nutlike, salty taste. Its empirical formula is C12H28N4OSC12. It occurs in free form in food and tissues as thiamin pyrophosphate, or as cocarboxylose. In the latter form, it functions as a coenzyme in carbohydrate metabolism. In thiamin deficiency the metabolism of sugar is incomplete and pyruvic acid (= CH3CO-CO2H) accumulates in the tissues, giving rise to toxic symptoms, such as occur in beriberi. The human subjects get depressed, nervous, quarrelsome, noncoöperative, and fearful, and may suffer from hyperchromic anemia. A considerable amount of thiamin may be lost in preparing foods.

Riboflavin is an orange-yellow, crystalline compound showing a fluorescence in acqueous solution. Its empirical formula is C17H20N4Oe. In nature, it may exist as such as a phosphate, or as a constituent of specific flavoproteins which function as enzymes in the tissues. In riboflavin deficiency there is a definite lack of this enzyme. The symptoms of riboflavin deficiency are ocular, oral and cutaneous. ocular symptoms are the forming of capillaries in the cornea and sclera, conjunctivitis, photophobia, with progressive cloudiness of the cornea opacity and even ulceration. The oral lesions are largely confined to the lips (cheilitis): fissured commissures extending onto the cheeks, ulceration, purplish-red tongue, ulceration around the nares and eyes, sometimes on the ears, arms, and groins. liver, and vegetables are its best sources.

Niacin is a white, needle-like crystal, non-hydroscopic, air-stable, and of bitter taste. Its empirical formula is $C_aH_aO_aN$. As an acid, niacin is weak and as an alkaline salt it is but slightly alkaline. It is heat stable in solution and does not lose action by drying. It functions as a component of two ensymes: coenzyme I and coenzyme II, which are concerned in glycolysis and respiration (Elvehjem 1940). Niacin deficiency can be demonstrated by decreased coenzyme content in liver and muscle

tissue. The dog is the only animal in which to make useful bioassays. The symptoms of extreme niacin privation are dermatitis, weakness, anorexia, mental depression, indigestion, sore mouth, and diarrhea—the pellagra syndrome. For knowledge of niacin one is endebted mainly to Goldberger of the U. S. Public Health Service and Elvehjem of the University of Wisconsin, who pioneered on the rôle of this factor of the B complex. The best natural sources of niacin are yeast, liver, and lean meat.—Abstract from the Report of the Committee on Assay of Foods, American Public Health Association: Am. J. Pub. Health, 34, (July, 1944): 783-786.

Keep the Goats Producing

To step up "food for war" on the home front, keep goats is the theme. The cost is small and their milk is tops from qualitative and quantitative standards. Goats are tractable, easy to manage, and can be kept in backyards and sheds. One cow's ration will feed 6 to 8 caprine milkers. Look to size, big udders, and long teats and see to the pedigree. The hygienic goatary has light, ventilation, drainage, concrete floor, and a high fence. Goats are climbers. Because bush and shrub are grass for goats, that this ruminant is an alimentary freak is pure fiction. Though less choosey than Bos, they dote on bright green, leafy alfalfa, and need it. Does can't synthesize vitamin A from discolored hay. Clover, cowpea, soybean, lespedeza, corn silage, beets, carrots, garden and kitchen waste, barley, bran, cottonseed, linseed, oats, sorghum grain, in fact the gamut of livestock feeds, belongs in the regular ration of the milking doe, and don't forget the salt-1 per cent/pound of concen-

The heat period recurs about every twentyone days, gestation period is about 150 days,
and lactation period ten months. Short-term
milkers are discarded. Select sires by the
orthodox rules for livestock breeding—production records of offspring and close relatives.
The stinky odor of bucks kept with the does
contaminates the milk. Keep them away.
Milk regularly twice a day—heavy milkers
three times—using a platform 18 inches high.
Milk into a pail with a narrow opening cov-

ered over with a strainer cloth. Use only smooth, clean utensils, of course.

Diseases and parasites cause little trouble in sanitary surroundings. Test for tuberculosis, rare as it is in the caprine species, and for brucellosis to prevent milk-borne undulant (Malta) fever. Regard all abortions as being of possible Brucella origin. Treat mastitis by hourly milking and hot applications-and see your veterinarian. Phenothiazine is the remedy of choice for stomach and nodular worms. Copper ad nicotine sulfates and tetrachlorethylene are also excellent. These drugs should be prescribed by veterinarians .- [I. B. Boughton, D.V.M.; O. C. Cunningham, B.S.; F. S. Hutz, Ph.D.; F. H. Leinbach, Ph.D., and R. F. Miller, M.S. Texas, New Mexico, Wyoming, Maryland, and California, respectively: Keep Your Milk Goats Producing for Victory. The Goat World, 29, (July, 1944): 1-6.

Acetonemia and Fatty Liver

The fatty, friable liver of ewes dead from pregnancy disease was found also in cows dead from acetonemia. It is the author's theory that enough stress has not been put on the hepatic damage found in studies of acetonemia which, obviously, is caused by a sugar level that is not capable of maintaining energy requirements without the oxidation of fats in amounts in excess of the body's ability to dispose of the resulting ketones. The major factor is the hepatic failure to maintain an adequate glycogen level. This may arise from dietetic error or inadequacy, and perhaps lack of exercise. Thus we have a similar disease in two genera of animals -cow and ewe-due to degenerative changes in the liver or depressed hepatic function. In dairy cows, acetonemia occurs mainly in heavy milkers, fed to produce more milk. It may be a herd problem in cows in a high state of nutrition. Where owners accomplish heavy milk production, they may be plagued with acetonemia. Though recently treated with massive doses of vitamin A, it is hard to associate the disease with vitamin A deficiency in well-nourished cows. Advocates of that theory have said little of liver damage which was confirmed by the Department of Nutrition, School of Hygiene, University of Toronto, where it was thought that inositol and choline might prevent the liver changes. The administration of 100 Gm. of each of these drugs along with 500 cc. of calcium gluconate and glucose brought improvement in one case treated from April 23 to May 31 with repeated doses of inositol, glucose, and three 250,000 unit doses of vitamin A, on May 9, 10, and 11. There was completed recovery by May 31, but the ration fed prior to parturition would seem to rule out vitamin A deficiency as the cause. If it can be proved that

vitamin A deficiency causes the liver damage of acetonemia and pregnancy disease of ewes, there may be some justification in assuming that this deficiency is the cause of these diseases.—[R. A. McIntosh, Ontario Veterinary College: Acetonemia—Ketosis, Canad. J. Comp. Med., 9 (Aug. 1944): 227-232.]

Mortality of Freshly Shorn Sheep

Sudden and severe losses may follow the shearing of sheep if inclement weather sets in. The factors involved are: (a) breakdown in heat regulation; (b) fasting before shearing may be a contributing factor; (c) calcium deficiency increases the effect of exposure; (d) tetanus; (e) 'caseous lymphadenitis; and (f) septicemia. Tetanus antitoxin and toxoid may be used in valuable rams. Septicemia is prevented by turning newly shorn sheep in clean pastures. Disinfecting wounds is not advised. The wounds will heal better if left to dry spontaneously .- [C. T. McKenna, B.V.Sc., Government Veterinary Officer, South Australia: Mortalities in Freshly Shorn Sheep, J. Dept. Agric. of South Australia, 47, (July, 1944): 533-534.]

Maize (= Indian Corn) Low in Niacin

Corn is the most important and the most widely distributed food plant in the world. In acreage, it stands second only to wheat. Besides its high content of carbohydrate, corn has sizable quantities of oil, protein, minerals, and minor components. It is, however, poor in B vitamins and on that account is responsible for the high incidence of pellagra among people living largely on a corn-meal diet supplemented with molasses, polished rice, white flour, corn-starch, and fat pork. It is distinctly deficient in niacin. In 30 strains of yellow field corn examined, the niacin content was found to vary from 11.3 to 36.3 µg. per gram. In a group of white field samples, the ratio was 12.7 to 29.4 μ g. per gram. The average in yellow corn, white field corn, sweet corn, and popcorn was 17.4 to 34.6 µg. per gram. Corn meal according to Elvehjem runs from 10 to 15 μ g. per gram meaning that an adult would have to eat 1,000 Gm. of corn meal daily to meet the niacin requirement of 15 mg. per day. An objective for corn growing should be to raise a strain of corn that contains at least 35 µg. per gram and for processors of corn meal to select the better types of corn for use by people whose dietary is pellagraproducing .- [Paul R. Burkholder, Ilda McVeigh, and Dorothy Moyer: Niacin in Maize. The Yale Journal of Biology and Medicine, 16, (July, 1944): 659-663.]

BOOKS

Minerals in Pasture: Deficiencies and Excesses

Pasture is a natural feed for livestock-the feed of the majority of the cattle and sheep of the world. Concentrates are but supplementary to pasture whether grazed, or fed as hay or silage. It is, therefore, the raw material of milk and meat and of wool and hides, in short the world's most important crop. The value of pasture in the United Kingdom is about £400,000,000. It furnishes 90 per cent of the exports of New Zealand, and 50 per cent of those of Australia and the Irish Free State. The importance of pasture rises with standards of living. Among the more wealthy populations, the consumption of protective foods (milk and meat) is much higher per capita than among the backward people who subsist mainly upon cheap cereals.

In view of the recommendations of the World Food and Agricultural Conference (1943) that all governments assume the responsibility of improving health standards through diet, there is a corresponding duty to gear up the pasture lands through extensive research and ex-Although soil chemists and perimentation. botanists have brought about great advances in grass production, biochemists and physiologists only recently have begun to investigate pastures in their relation to the nutrition and health of grazing animals in respect to the vitamins and minerals now known to be essential to the productivity of livestock. Deficient pasture cannot develop efficient animals. Losses have been sustained by improving breeds without upgrading the grass they eat. The two must be considered together. The chemist, the farmer, the stockman, the nutritionist, and the veterinarian, not to omit the laboratory worker, must cooperate in the task of improving the pasture and its yield of hay and silage, through studies of the calcium, phosphorus, iron, iodine, copper, cobalt, and other elements contained. In addition, the toxic elements (selenium, molybdenum) require attention in research on the nutritive value of pastures. is a fight against disease since the malnourished are more susceptible to infections.

Beyond this manifestly practical foreword, the author sets down the present day knowledge of livestock diseases attributed or attributable to (1) cobalt, (2) cobalt and copper, (3) copper, (4) imbalance of sodium-potassium-chlorine, (5) iodine deficiency, (6) phosphorus and calcium deficiency, (7) magnesium deficiency (grass tetany, etc.), (8) selenium excess, (9) manganese and molybdenum (scours, enzoötic hematuria), (10) fluorine and arsenic poisoning, (11) nitrate excess (oat-hay poisoning in the United States and Canada), (12) general discussion, (13) bibliography of

reviews, and (14) a table listing 21 well-known diseases of pastoral origin, their geographical distribution, pathology, experimental production, and conclusion.

This book is a valuable complement of veterinary literature. It contains a wealth of material of American origin-a fascinating text, readable, practicable, useful in the every day work of a veterinarian, and without a dull paragraph. Every veterinarian should commit the foreword to memory. The text is an assemblage of important but scattered material documenting an admittedly overlooked phase of animal nutrition .- [Minerals in Pasture Deficiencies and Excesses in Relation to Animal Health, Technical Communication No. 15. by F. C. Russell, B.Sc., with a foreword by Sir John Boyd Orr, D.S.O., M.C., M.D., F.R.S. 92 Paper. Imperial Bureau of Animal Nutrition, Rowett Institute, Bucksburn, Aberdeen, Scotland. 1944. Price 5 shillings.]

Penicillin

A book in offset type bringing the known facts about penicillin up to date, along with 303 references, is a precious possession in watching the rapid developments of the outstanding medical discovery which grew out of Pasteurs' observation that the bacillus of diphtheria, and pathogenic cocci quickly disappeared in the presence of soil. Although more than half a century has elapsed since that "lysis" was observed, the antibiotics of the 1940's which are owed to the brilliant work and foresight of Rockefeller Institute of Medical Research have to be linked to the original Pasteurian hypothesis that soil is a destroyer of pathogenic microbes. It required but the work of Florey (1936) and that of Dubos (1939) to bring about the isolation of the germicidal organisms-Bacillus brevis and Penicillium notatum-which now take their place among famous microörganisms as antagonists not producers of disease, thanks in no small degree to the advancement of biologic chemistry which makes them available for therapeutic purposes. The book is divided into eight chapters including the long bibliography, showing that putting penicillin in the hands of the doctors was not less romantic than the discovery itself. Nothing can yet be said of penicillin in veterinary medicine since only tricklings of its clinical use under controlled conditions have come to light. Experimental work on laboratory animals (mice, rabbits, cats) have nevertheless served as a guide to its future application in veterinary clinical work. Its striking action against Staphylococcus aureus, hemolytic streptococcal infections, and in war wounds, locally, seem to establish a field for its use in veterinary medicine.-[Penicillin. Paper. 127 pages. By Merck & Company, Rahway, N. J. 1944.]

THE NEWS

Registration—Eighty-First Annual Meeting, Chicago, Aug. 22-24, 1944

Breakdown by States		Mexico
Alabama	9	Dutch Guiana 1
Arizona		Haiti 1
Arkansas	6	Cuba 1
California	12	Peru 4
Colorado	19	
Connecticut	6	Total 1,563
Delaware	1	
District of Columbia	4	Recapitulation
Florida	8	Veterinarians 998
Georgia	14	(Members, 913; Non-members, 85)
Idaho	2	Wives 339
Illinois	423	Exhibitor representatives (other than
Indiana	184	members) 109
Iowa	132	
Kansas	46	
Kentucky	11	Guests (Press, speakers, etc.) 60
Louisiana	10	Children 22
Maine		
Maryland	9	Total
Massachusetts	5	One hundred and thirty-two officers of the
Michigan	87	Army Veterinary Corps were in attendance, and
Minnesota	51	are included in the above total.
Mississippi	8	
Missouri	77	
Montana	1	APPLICATIONS
Nebraska	24	AFFLICATIONS
Nevada		
New Hampshire	2	The listing of applicants conforms to the requirements
New Mexico		of the administrative by-laws-Article X, Section 2.
New Jersey	22	Florida I Calling
Control Street, and the control of t		First Listing
New York	56	Adair, George T.
North Carolina	4	Millhaven Farm, Cleveland, Ga.
North Dakota	2	D.V.M., University of Georgia, 1931.
Ohio	122	Vouchers: B. E. Carlisle and W. C. Den-
Oklahoma	5	dinger.
Oregon	4	ANDERSON, GUY R., JR.
Pennsylvania	29	Box 4187-300 S. Texas Ave., Odessa, Texas.
Rhode Island		D.V.M., Texas A. & M. College, 1944.
South Carolina	5	Vouchers: W. A. Belcher and T. M. Gordon,
South Dakota	11	Jr.
Tennessee	10	ARMISTEAD, W. W.
Texas	16	Fort Reno, Okla.
Utah	2	D.V.M., Texas A. & M. College, 1938.
Vermont		Vouchers: J. A. McCurdy and J. H. Shoe-
	1	maker.
Virginia	3	BALDWIN, F. M.
Washington	4	Horton, Kansas.
West Virginia	5	D.V.S., Kansas City Veterinary College, 1907.
Wisconsin	84	Vouchers: C. W. Bower and G. A. Rathman.
Wyoming	2	BARTON, W. W.
Canada	15	Minier, Ill.
	190	101

D.V.M., Chicago Veterinary College, 1912. Vouchers: C. C. Hastings and C. W. Bower. CARROLL, R. E.

Box 731, Harlingen, Texas. D.V.M., Texas A. & M. College, 1941. Vouchers: A. A. Lenert and H. H. Lutz. CASE, T. A.

Box 556, Nickerson, Kansas. D.V.M., Kansas State College, 1912. Vouchers: C. W. Bower and A. A. Case.

FITTE, JOHN M.

Box 124, Marlin, Texas. D.V.M., Texas A. & M. College, 1932. Vouchers: L. G. Cloud and W. G. Brock.

GRIMSLEY, ROY Allen, Kansas.

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D.V.S., Western Veterinary College, 1902. Vouchers: C. W. Bower and G. A. Rathman. HALE, CLYDE F.

117 Court St., Charleston, W. Va. D.V.M., Alabama Polytechnic Institute, 1944. Vouchers: V. H. Miller and S. E. Hershey.

Hodges, W. Ross.

Ranger, Texas.
D.V.M., Kansas City Veterinary College, 1912.
Vouchers: T. T. Christian and P. Christian.
HOWARD, PAUL V.

Hunsberger, N. E.—Rt. No. 4, Grand Rapids 5, Mich.

D.V.M., Michigan State College, 1922. Vouchers: H. Elzinga and J. Y. Veenstra.

Vouchers: H. Elzinga and J. Y. Veenstra Huston, J. D. 823 West Office, Harrodsburg, Ky.

B.V.Sc., Ontario Veterinary College, 1940. Vouchers: E. E. Saulmon and M. H. Doller. Keller, Robert J.

4608 S. 7th St., Louisville 8, Ky. D.V.M., Colorado State College, 1944.

Vouchers: R. S. Youmans and M. C. Abraham.

KIRK, H. M.

Griswold, Iowa.

M.D.C., Chicago Veterinary College, 1911. Vouchers: C. J. Norden and N. J. Perley.

LOCKHART, G. P.

Presidente Betto 2730, Montevideo, Uruguay. Dr. in Medicine, Veterinary, Veterinary School, Montevideo, 1922.

Vouchers: L. A. Merillat and J. G. Hardenbergh.

Mosci, Amleto

Rua Contagem 241, Belo Horizonte, Minas, Brazil.

D.V.M., Escola Superior Agricultura de Veterinaria.

Vouchers: A. V. Machado and A. M. Wilwerth.

PAIGE, R. A.

1360 Rood Ave., Grand Junction, Colo. D.V.M., Colorado State College, 1926. Vouchers: C. Sevy and A. P. Drew.

Perrin, William O. Wharton, Texas.

D.V.S., Kansas City Veterinary College, 1911. Vouchers: L. G. Cloud and E. A. Grist. REISER, E. T.

612 Walnut St., Windsor, Colo.

D.V.M., Colorado State College, 1935.

Vouchers: N. J. Miller and J. Farquharson. THOMAS, JAY N.

LAAF-Station Hosp., Del Rio, Texas.

D.V.M., Alabama Polytechnic Institute, 1937. Vouchers: H. T. Shull and L. J. Kepp.

THOMAS, R. F. 86 Cain St., Atlanta, Ga.

D.V.M., Indiana Veterinary College, 1912. Vouchers: L. A. Mosher and B. E. Carlisle.

WATSON, J. S.

819 E. Grayson St., Mexia, Texas.
M.D.C., Chicago Veterinary College, 1909.
Vouchers: T. T. Christian and P. Christian.

Wells, V. L. P. O. Box 593, Selma, Ala.

D.V.M., Alabama Polytechnic Institute, 1941. Vouchers: I. S. McAdory and F. P. Woolf.

Second Listing

Almanza, Reyes Hernando, P. O. Box 86, East Lansing, Mich.

Baber, J. B., Stockton, Ill.

Barlow, W. W., 7929 Calumet Ave., Chicago, Ill. Beagle, Arthur G., Box 434, Norfolk, Neb.

Blohm, Frank D., Hubbard, Iowa.

Brand, R. W., 609-3rd Ave., Longmont, Colo. Bugbee, Clinton H., 1738 W. Van Buren St., Phoenix, Ariz.

Crowell, Ralph H., 6754 Normal Blvd., Chicago 21, Ill.

Dewar, John K., 207 N. Eleventh St., Cherokee, Iowa.

Donnell, Lloyd, 242 W. 70th St., Chicago 21, Ill.
Doty, C. J., 625 S. Canal St., Carlsbad, N. Mex.
Gibson, J. G., P. O. Box 1015, Florence, S. Car.
Givens, Craig B. Jr., Box 407, Tazewell, Va.
Greenhoff, Garner R., 142 Marathon Ave., Dayton, Ohio.

Griebie, K. E., Brownton, Minn.

Hammermeister, Russell W., Rt. 1, Worthington, Ohio.

Hertich, C. D., 1916 Swanwick St., Chester, Ill. Hobart, C. Douglas, 509 Market St., Cheraw, S. Car.

Jones, F. B., 204 Federal Bldg., Topeka, Kansas. Kingma, Fred J., 121 E. Weber Rd., Columbus 2, Ohio.

Kochendorfer, Frank C., 702 Center Ave., Decorah, Iowa.

Kocher, W. E., 109-11th Ave., N., So. St. Paul, Minn.

Lauts, A. E., P. O. Box 114, 113 Maple St., Gordon, Neb.

McFerrin, R. E., Greenville, Ala.

McMurray, Arthur A., P. O. Box 12, Athens, Tenn.

Orozco, Gutierrez Benjamin, Agustin Rivera No. 21, Lagos de Moreno, Jal., Mexico. Parrish, Charles, 1102 State Office Bldg., Richmond, Va.

Pottle, Leslie G., 1452 Vermont, Quincy, Ill.

Price, L. O., Blacksburg, Va.

Quillin, Clyde R., P. O. Box 342, Smithfield, Va. Schmidt, Frederick F., 1104-23rd St., Douglas, Ariz.

Shelton, John T., Buncombe, Ill.

Smith, John W., Lebo, Kansas. Stalnaker, H. B., Edgewood, Iowa.

Stever, Donald W., 801 Walnut St., Hollidaysburg, Pa.

Suter, R. J., 1113 North Ave., Waukegan, Ill. Urbanek, George M., 6320 Broadway, Chicago,

Weitz, William L., 3921 Main St., Eggertsville 21, N. Y.

Wright, R. H., 43 King St., Dundas, Ontario, Can.

Zierold, Reyes Pablo, Juarez No. 40, Tlalnepantla Edo. de Mexico, Mexico.

1944 Graduate Applicants

First Listing

The following are graduates who have recently received their veterinary degrees and who have applied for AVMA membership under the provision granted in the Administrative By-Laws to members in good standing of junior chapters. Applications from this year's senior classes not received in time for listing this month will appear in later issues. An asterisk (*) after the name of a school indicates that all of this year's graduates have made application for membership.

Michigan State College

EASTMAN, JENESS W., D.V.M.

Coldwater, Mich.

Vouchers: E. K. Sales and B. J. Killham.

MILLIMAN, EARL M., D.V.M.

Richland, Mich.

Vouchers: C. F. Clark and B. J. Killham.

MOLINARE, PETER B., D.V.M.

c/o G. Weidman, Ableman, Wis.

Vouchers: C. F. Clark and F. Thorp, Jr.

Moser, James H., D.V.M.

Rt. No. 2, Rochester, Mich.

Vouchers: J. P. Hutton and E. K. Sales.

PRAY, JOHN D., D.V.M.

Levering, Mich.

Vouchers: R. F. Langham and F. Thorp, Jr. Sigars, Denzil B., D.V.M.

Waco, Mo.

Vouchers: C. F. Clark and B. J. Killham.

State College of Washington

DARNELL, GLENN R., D.V.M.

Cathlamet, Wash.

Vouchers: C. W. Shumaker and L. H. Gaw.

Dow, CARROLL E., D.V.M.

Rt. No. 2, Box 28, Lodi, Calif.

Vouchers: G. J. Freiermuth and J. E. McCoy.

DOWNS, GEORGE, D.V.M.

2363 Broadway, Redwood City, Calif.

Vouchers: G. J. Freiermuth and N. G. Covington

KLAVANO, PAUL A., D.V.M.

122 College Station, Pullman, Wash.

Vouchers: E. E. Wegner and N. G. Covington,

Kuhn, U. S. G., III, D.V.M. 357 Lee St., Seattle, Wash.

Vouchers: G. J. Freiermuth and E. C. Mc-Culloch.

LEE, WELDON R., D.V.M.

Box 527, Salmon, Idaho.

Vouchers: E. C. McCulloch and J. E. McCoy.

MAHONEY, MERVYN, D.V.M.

Rt. No. 4, Box 156, Petaluma, Calif. Vouchers: E. E. Wegner and J. E. McCoy.

Second Listing

Alabama Polytechnic Institute

Backsman, A. L., D.V.M., 610 23rd Ave., N., St. Petersburg, Fla.

Barber, R. Leslie, D.V.M., Box 709, Auburn, Ala. Bass Raymond, L., D.V.M., Kissimmee, Fla.

Brawner, W. Reuben, D.V.M., Waverly, Ala. Canon, F. W., D.V.M., 1402 St. James Court,

Louisville, Ky. Carney, J. P., D.V.M., 8th St. Road, Meridian,

Carter, Edward, D.V.M., Skipwith, Va.

Cofer, George W., D.V.M., Box 34, Wagener, S. Car.

Cooper, Irven R. Jr., D.V.M., Allendale, S. Car. Cottle, Lawrence W. Jr., D.V.M., 410 St. Charles Ave., Montgomery, Ala.

Cox, Erston S., D.V.M., Blountsville, Ala.

Crespo, Victor, D.V.M., P. O. Box 520, San Jose, Costa Rica, C.A.

Davis, James A., D.V.M., 417 E. Jerger St., Thomasville, Ga.

Davis, James J., D.V.M., 1119 Sixth Ave., Gadsden, Ala.

Duffell, Gordon L., D.V.M., Forsyth, Ga.

Fievet, Charles E., D.V.M., Rt. No. 1, Box 87. Bessemer, Ala.

Graham, Oswald H., D.V.M., Tarboro, N. Car.

Grant, W. Ray, D.V.M., Wedowee, Ala.

Hines, Fleetwood, D.V.M., Darlington, Ala.

Hoffmeyer, T. P., D.V.M., Rt. No. 2, Florence, S. Car.

Hollinger, Shannon R., D.V.M., Camden, Ala. Howard, Thomas J., D.V.M., Leesburg, Va.

Johnston, W. L., D.V.M., Fairfield, Ala.

Jones, Robert L., D.V.M., Renfroe, Ala. King, Roland, D.V.M., Rupert, Idaho.

Knowles, Robert P., D.V.M., 2934 N. W. 17th Ave., Miami, Fla.

McLean, Clifton C., D.V.M., Eagle Springs, N. Car.

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- Nance, Harold W., D.V.M., 151 Cox St., Auburn, Ala.
- Phillips, Robert B., D.V.M., Rt. "C," Cordele, Ga.
- Porter, Ralph W., D.V.M., 216 Genelda Ave., Quincy, Fla.
- Raulston, Gilbert L., D.V.M., Trenton, Ga. Rawlinson, William F., D.V.M., Manning, S.
- Car. Reisinger, R. C., D.V.M., 148 N. E. 57th St.,
- Miami, Fla. Riddle, Herbert E., D.V.M., Box 228, Marietta,
- Rodgers, L. D., D.V.M., Kingstree, S. Car.
- Schaffer, J. David, D.V.M., Manchester, Md.
- Sikes, Dennis, D.V.M., Cobbtown, Ga. Sterrett, Robert H., D.V.M., 175 W. Glenn, Au-
- burn, Ala. Taylor, Julian B., D.V.M., 100 Plant Ave., Elba,
- Thomas, Frank L., D.V.M., 701 S. 68th St., Birmingham 6, Ala.
- Till, William A., D.V.M., Rt. No. 4, Box 91, Greenville, Ala.
- Vickers, F. G., D.V.M., Century, Fla.
- Wasman, Stanley C., D.V.M., 161 Ocean Dr., Miami Beach, Fla.
- Watson, J. B. Jr., D.V.M., 116 Cox St., Auburn, Ala.
- Whaky, A. E., D.V.M., Kissimmee, Fla. Young, Cole Jr., D.V.M., Auburn, Ala.
- Young, W. Oswald, D.V.M., Sumner, Ga.

Iowa State College

- Boll, L. F., D.V.M., Sheldon, Iowa.
- Bowstead, Thomas T., D.V.M., 1609 Seventh Ave., DeWitt, Iowa.
- Dullum, Robert E., D.V.M., Watertown, Minn. Gooch, John M., D.V.M., 2704 Lincolnwood Dr., Evanston, Ill.
- Hopkins, Elvin J., D.V.M., 304 Superior St., Storm Lake, Iowa.
- Horning, Melvin A., D.V.M., 102 Fourth St., Albert Lea, Minn.
- Jorgensen, Jerold, D.V.M., Elk Horn, Iowa.
- Lundvall, Richard L., D.V.M., Boxholm, Iowa.
- McManus, Edward, D.V.M., McIntosh, Minn.
 Malmquist, Winston A., D.V.M., Saint Croi
- Malmquist, Winston A., D.V.M., Saint Croix Falls, Wis.
- Nuessen, Paul J., D.V.M., Rt. No. 5, S. 24th St., Quincy, Ill.
- Philbrick, R. E., D.V.M., 3631 Van Buren St., Arlington, Calif.
- Pick, Elmer H., D.V.M., Briar Cliff College, Sioux City, Iowa.
- Reigh, Robert J., D.V.M., 519 N. Raynor Ave., Joliet, Ill.
- Ryan, Neil T., D.V.M., 5050 West St., Sioux City, Iowa.
- Sedlacek, Glen, D.V.M., Fairview, Mont.
- Spesard, D. E., D.V.M., 2809 N. Second St., Shelbyville, Ill.
- Tietz, William G., D.V.M., Eldora, Iowa.

Kansas State College

- Beaver, Floyd E., D.V.M., R.F.D. No. 1, Olathe, Kansas.
- Bradbury, John A., D.V.M., 340 N. 16th, Manhattan, Kansas.
- Brown, Clyde E., D.V.M., 1425 Laramie, Manhattan, Kansas.
- Conley, Neel L., D.V.M., 507 W. Harvey, Wellington, Kansas.
- Duncan, Clifford E., D.V.M., 1015 Fremont, Manhattan, Kansas.
- Fulton, Joseph F., D.V.M., 1634 Osage St., Manhattan, Kansas.
- Gentry, Robert F., D.V.M., 120 S. Franklin Ave., Topeka, Kansas.
- Gernand, Orville E., D.V.M., R.R., Markleville, Ind.
- Good, Wayne L., D.V.M., 421 N. 16th, Manhattan, Kansas.
- Griffing, William J., D.V.M., R.R. No. 4, Manhattan, Kansas.
- Gross, Dean R., D.V.M., Russell, Kansas.
- Guilfoil, Robert E., D.V.M., 1518 Tauromee Ave., Kansas City 2, Kansas.
- Gustafson, Neil C., D.V.M., 530 Pierre, Manhattan, Kansas.
- Hall, William C. Jr., D.V.M., R.R. No. 2, Coffeyville, Kansas.
- Healy, John B., D.V.M., R.R. No. 1, Junction City, Kansas.
- Henshaw, Donald A., D.V.M., 521 North E St., Herington, Kansas.
- Hill, Lawrence A., D.V.M., 1200 Central Ave., Horton, Kansas.
- Johnson, Walter F., D.V.M., Ottawa, Kansas.
- Keith, Richard M., D.V.M., Rt. No. 4, Burlington, Kansas.
- Kordisch, Foster C., D.V.M., Box 1144, Zeigler, Ill.
- Milleret, Roy, D.V.M., R.R. No. 1, Kansas City, Kansas.
- Myers, Richard B., D.V.M., Bethal, Kansas.
- Rondeau, Hautesse, D.V.M., 532 N. 14, Manhattan, Kansas.
- Scherger, Louise Ann, D.V.M., 610½ N. Manhattan, Manhattan, Kansas.
- Strathman, Elmer H., D.V.M., R.R. No. 1, Seneca, Kansas.
- Tanner, Wiley B., D.V.M., St. John, Kansas.Wertz, Wesley H., D.V.M., 340 N. 16th St., Manhattan, Kansas.

Michigan State College

- Ashby, Howard C., D.V.M., R.F.D. No. 3, Lee's Summit, Mo.
- Bivins, James A., D.V.M., R.F.D. No. 1, Bridgeton, N. J.
- Blind, William D., D.V.M., 522 Northwestern Ave., West Lafayette, Ind.
- Bolton, Wesson D., D.V.M., Rt. No. 1, Cabot, Vt. Bortree, Alfred L., D.V.M., 237½ Valley Court, East Lansing, Mich.

Bryan, Harold S., D.V.M., Perkasie, Pa.

Bush, Donald L., D.V.M., 36 Bridge St., Augusta, Maine.

Buth, Peter A., D.V.M., Comstock Park, Mich. Collins, Douglas J., D.V.M., 3781 W. Philadel-

phia Ave., Detroit 6, Mich.

Colton, Max W., D.V.M., 1855 Superior St., Muskegon, Mich.

Curell, Sherman P., D.V.M., Vassar, Mich.

Drury, Albert R., D.V.M., Royalston Rd., Athol, Mass.

Flynn, Robert J., D.V.M., 5712 S. Wood St., Chicago, Ill.

Freid, Norman T., D.V.M., 2423 Cortland, Detroit, Mich.

Gingrich, Kenneth S., D.V.M., 22767 Firwood Ave., East Detroit, Mich.

Godisak, John J., D.V.M., Mattawan, Mich.

Grear, J. Edward, D.V.M., Gladwin, Mich.

Hawkins, Philip A., D.V.M., Dept. of Bacteriology and Public Health, Michigan State College, East Lansing, Mich.

Hodulik, Charles J., D.V.M., Box 75, Clinton, N. J.

Hulen, Carl, D.V.M., 610 College, Columbia, Mo. Jackson, Ted F., D.V.M., Wayland, Mich.

Johnson, Earl W., D.V.M., 15431 Bringard Dr., Detroit 5, Mich.

Klotz, Bruce F., D.V.M., 1148 Kinnaird Ave., Fort Wayne, Ind.

Krieger, George T., D.V.M., 822 1st Ave., E., Williston, N. Dak.

Krushak, Donald H., D.V.M., 1002 Lindley St., Bridgeport, Conn.

Lipson, Milton P., D.V.M., 3043 Grand Ave., Detroit, Mich.

Mauck, Benjamin F. Jr., D.V.M., Owensville, Ind.

Meyers, Ivan S., D.V.M., R.R. No. 17, Box 494, Indianapolis, Ind.

Neff, Jacques W., D.V.M., 73 Seventh Ave., La-Grange, Ill.

Neff, Paul E., D.V.M., 5044 N. 26th St., Milwaukee, Wis.

O'Rourke, William J., D.V.M., R.R. No. 2, Columbus, Wis.

Preston, Jack W., D.V.M., Wells, Minn.

Pula, Joseph F., D.V.M., Rt. No. 1, Standish. Mich.

Semtner, William K., D.V.M., Konawa, Okla.

Siefert, Frederick W., D.V.M., Dorr, Mich. Smith, Arlan R., D.V.M., Elmore, Minn.

Washko, Floyd V., D.V.M., R.F.D. No. 4, New Brunswick, N. J.

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Zingeser, Emanual R., D.V.M., 2902 Tuxedo Ave., Detroit 6, Mich.

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Ohio State University

Adams, Robert C., D.V.M., 390 Prospect St., Berea, Ohio.

Allison, Ralph E., D.V.M., Morrow, Ohio.

Bay, Robert L., D.V.M., Cumberland, Ohio. Belknap, Thomas E., D.V.M., 239 6th St., N.E., New Philadelphia, Ohio.

Bice, Harry V. Jr., D.V.M., 249 N. 7th St., Newark, N. J.

Bohl, Edward H., D.V.M., Mt. Orab, Ohio.

Boothe, Harry W., D.V.M., 514 N. Harris Ave., Columbus, Ohio.

Bowman, Bernard, D.V.M., Wilmington, Ohio. Brandehoff, Bede E., D.V.M., Delphos, Ohio.

Brown, Frank L., D.V.M., 38 Rear, 17th Ave., Columbus, Ohio.

Clayton, Frederick W., D.V.M., Greenfield, Ohio. Crouch, James J., D.V.M., LaCenter, Ky.

Dunlap, Owen E., D.V.M., Rt. No. 1, Greensfork, Ind.

Edmondson, Robert, D.V.M., Drake Rd., Brunswick, Ohio.

Edwards, Robert J., D.V.M., 1335 Ohio Ave., Youngstown 4, Ohio.

Eggleston, J. Richard, D.V.M., 3937 Parkside Rd., Columbus, Ohio.

Figueroa, Juan, D.V.M., Veterinary School, Lima, Peru, S.A.

Grigor, William B., D.V.M., 392 Kennelworth Ave., Warren, Onio.

Guy, Donald E., D.V.M., 221 N. Monroe, Hartford City, Ind.

Haberman, Fred O., D.V.M., Rt. No. 2, Galena, Ohio.

Hanawalt, William L., D.V.M., Kinsman, Ohio. Harrod, Louis W., D.V.M., Harrod, Ohio.

Hitesman, Paul W., D.V.M., Rt. No. 1, Morrow, Ohio.

Hogsett, Thomas E., D.V.M., Hillsboro, Ohio. Howard, Fritz, D.V.M., School of Riding, Secor Rd., Toledo, Ohio.

Kile, James C. Jr., D.V.M., West Jefferson, Ohio.

Liggett, Thomas W., D.V.M., 430 St. Clair Ave., Cadiz, Ohio.

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Little, Ernest F., D.V.M., Rt. No. 1, Jamestown, Ohio.

Lobach, William S., D.V.M., 1401 Lehigh St., Easton, Pa.

Lyle, Willis E., D.V.M., Flushing, Ohio.

McClung, James L., D.V.M., Rt. No. 1, Middletown, Ohio.

McCoy, James A., D.V.M., 225 N. Main St., Washington C.H., Ohio.

Meckstroth, Leslie E., D.V.M., New Knoxville, Ohio.

Mendenhall, Wm. James, D.V.M., Greensburg. Ind.

Meyer, Cullen W., D.V.M., Rt. No. 1, Navarre, Ohio.

- Meyer, William J., D.V.M., Rt. No. 8, Greensburg, Ind.
- Miller, Henry M., D.V.M., Spencerville, Ohio. Moe, Harold M., D.V.M., 609 Hester St., Stillwater, Okla.
- Newhouse, Homer E., D.V.M., 1187 Crayton Rd., Lima, Ohio.
- Nichols, Frederick A., D.V.M., Alexandria, Ohio. Phillips, Marvin S., D.V.M., Rt. No. 2, Barnesville, Ohio.
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- Reed, William O., D.V.M., Milford Center, Ohio. Richardson, I. Dale, D.V.M., Rt. No. 2, Mt. Sterling, Ohio.
- Riggs, Harry E., D.V.M., 385 S. Hague Ave., Columbus, Ohio.
- Romaker, Robert H., D.V.M., Liberty Center,
- Ross, Jewell N., D.V.M., Stockport, Ohio. Sautter, Jay H., D.V.M., Waynesburg, Ohio.
- Schutz, David W., D.V.M., Pandora, Ohio. Smith, Alan, D.V.M., 253 S. 18th St., Columbus, Ohio.
- Smith, C. Roger, D.V.M., Hartville, Ohio.
- Smith, Carl W., D.V.M., Rt. No. 1, Clyde, Ohio. Smith, Howard S., D.V.M., Rt. No. 1, Clyde, Ohio.
- South, Thomas M., D.V.M., 326 Xenia Ave., Wilmington, Ohio.
- Stansbury, Robert L., D.V.M., 35 Richland Ave., Athens, Ohio.
- Stevenson, Robert L. II, D.V.M., 4720 Springfield Pike, Dayton, Ohio.
- Stuck, Charles E., D.V.M., 410 W. Franklin St., Kenton, Ohio.
- Thompson, Gilbert P., D.V.M., Linesville, Pa.
- Todd, Franklin P., D.V.M., Montgomery, Ohio. Vesper, Robert W., D.V.M., 237 W. Dunedin Rd., Columbus, Ohio.
- Wade, Donald J., D.V.M., Defiance, Ohio.
- Wallace, Grady G., D.V.M., Fort Branch, Ind. Washburn, Glenn A., D.V.M., Oak Hill, Ohio.
- West, Hugh G., D.V.M., 390 Ohio Ave., Salem, Ohio.
- Wilson, Ernest J. Jr., D.V.M., 1616 Summit St., Columbus, Ohio.
- Wilson, J. O., D.V.M., 2992 Neil Ave., Columbus,
- Wolfe, John, D.V.M., Rt. No. 3, Lancaster, Ohio. Yates, Samuel D., D.V.M., 3057 W. Bailey Rd., Cuyahoga Falls, Ohio.

University of Pennsylvania

- Adams, John Q. Jr., V.M.D., 3514 Spring Garden St., Philadelphia 4, Pa.
- Baker, Charles S., V.M.D., Center Square, Pa. Blacksmith, Gary L., V.M.D., R.D. No. 1, Me-
- chanicsburg, Pa. Blumner, Harry N. Jr., V.M.D., 3929 N. 17th
- St., Philadelphia 40, Pa. Boyd, Oscar L. Jr., V.M.D., 130 S. 39th St., Philadelphia 4, Pa.

- Brielman, Marguerite, V.M.D., 791 Holmes Rd., Pittsfield, Mass.
- Brielman, Winthrop E., V.M.D., 791 Holmes Rd., Pittsfield, Mass.
- Brown, Paul Jr., V.M.D., R.F.D. No. 1, Pottstown, Pa.
- Clark, Mary A., V.M.D., Christiana Rd., New Castle, Del.
- Davis, Arthur H., V.M.D., 12 Dartmouth St., Warren, Pa.
- Diehl, Kenneth E., V.M.D., R.F.D. No. 1, Northumberland, Pa.
- Ellmers, George A., V.M.D., 45 Cane St., Bogota,
- Foster, William J., V.M.D., 372 Devon St., Kearny, N. J.
- Fox, Owen K., V.M.D., Clifton Springs, N. Y.
- Guise, Richard C., V.M.D., 2128 W. Tioga St., Philadelphia 40, Pa.
- Hulyk, Harry, V.M.D., Box 183, McDonald, Pa. Jaffe, Marvin A., V.M.D., 2345 79 Ave., Philadelphia 35, Pa.
- Kolodner, Jacob L., V.M.D., 2445 Douglas St., Philadelphia, Pa.
- Krechmer, Morton, V.M.D., 15 Park Ave., Highland Park, Upper Darby, Pa.
- Lubin, Edward D., V.M.D., 2542 N. 28 St., Philadelphia, Pa.
- Lupton, Burritt K. L., V.M.D., R.F.D. No. 1, Franklin Ave., Wyckoff, N. J.
- Nemeth, John D., V.M.D., 405 E. 69th St., New York, N. Y.
- O'Neal, Joseph M., V.M.D., Loogootee, Ind.
- Penny, James M., V.M.D., 3760 N. 9th St., Philadelphia, Pa.
- Riser, Nancy W., V.M.D., 39th St. & Woodland Ave., Philadelphia 4, Pa,
- Sheckler, Grant C., V.M.D., 1655 Laketon Rd., Wilkinsburg, Pa.
- Shute, Joseph G., V.M.D., Hilltown Rd., Line Lexington, Bucks Co., Pa.
- Terry, John L. Jr., V.M.D., 74 Camp St., Hyannis, Mass.
- Thompson, Laird S., V.M.D., 124 E. Spring St., Zelienople, Pa.
- Wadsworth, James R., V.M.D., Dresden, N. Y.
- Way, Robert F., V.M.D., 30 Curry Circle, Swampscott, Mass.
- Widenmeyer, Arthur E., V.M.D., Bustleton Pike, Somerton, Philadelphia, Pa.
- Woods, William B., V.M.D., 284 N. Franklin St., Holbrook, Mass.
- Zackon, Bernard, V.M.D., 6610 Rising Sun Ave., Philadelphia 11, Pa.

State College of Washington

- Voice, Wilbur, D.V.M., Rt. No. 1, Box 858, Fair Oaks, Calif.
- Clemens, Robert N., D.V.M., 507 Oak St., Pullman, Wash.
- Coffman, Robert T., D.V.M., 1216 S. Union, Tacoma, Wash.

Detwiler-Butcher, Paul, D.V.M., 4511 S. Park Ave., Tacoma, Wash.

Dubigk, Richard S., D.V.M., 516 E. 1st St., Port Angeles, Wash.

Frederickson, James L., D.V.M., Rt. No. 2, Box 15, Puyallup, Wash.

Gustafson, Lloyd M., D.V.M., Rt. No. 4, Box 656, Tacoma, Wash.

Helfer, R. G., D.V.M., 1909 E. St., Pullman, Wash.

Jungerman, David M., D.V.M., 1328 Emerson St., Palo Alto, Calif.

Loge, Magnus W., D.V.M., 628 Sleepy Hollow Lane, Laguna Beach, Calif.

Macho, John E., D.V.M., Box 452, Thompson Falls, Mont.

Miller, John H., D.V.M., 228 E. San Bernardino Rd., Covina, Calif.

Mustard, Donald H., D.V.M., Star Rt. Box 83, Montesano, Wash.

Ott, George V., D.V.M., Irby, Wash.

Pettit, Glen R. Jr., D.V.M., Custer, Wash.

Sayles, Dale M., D.V.M., 1712 A St., Pullman, Wash.

Soave, Orland A., D.V.M., 5666 Telegraph Ave., Oakland 9, Calif.

Underwood, Stanley W., D.V.M., Box 92, Sunnyside, Wash.

Whitley, Virginia, D.V.M., Rt. No. 2, Box 172, Poulsbo, Wash.

COMMENCEMENTS

Agricultural and Mechanical College of Texas

At the commencement exercises of the Agricultural and Mechanical College of Texas on Sept. 22, 1944, R. P. Marsteller, dean of the School of Veterinary Medicine, presented the following candidates for the degree of Bachelor of Science: Bryan, John M.; Rentler, Melvin E.; Stoddard, Hannis L.

The following candidates were presented for the degree of Doctor of Veterinary Medicine: Champion, Charles L.; Holbrook, Leo C.; Scott, Robert E.; Streetman, Edward G.; Toro, Eduardo E.

Kansas State College

At the commencement exercises of Kansas State College on Sept. 16, 1944, Dean R. R. Dykstra presented the following candidates for the degree of Doctor of Veterinary Medicine:

Adams, Eugene W. Beaver, Floyd E. Brandbury, John A. Brown, Clyde E. Chiles, Harry E. Conley, Neel L. Duncan, Clifford E. Fulton, Joseph F. Gentry, Robert F. Gernand, Orville E. Good, Wayne L. Griffing, William J. Gross, Dean R. Guilfoil, Robert E. Gustafson, Neil C.
Hall, William C.
Healy, John B.
Henshaw, Donald A.
Hill, Lawrence A.
Johnson, Walter F.
Keith, Richard M.
Kordisch, Foster C.

Milleret, Roy E.
Myers, Richard B.
Rondeau, Hautesse E.
Scherger, Louise A.
Strathman, Elmer H.
Tanner, Wiley B.
Wertz, Wesley H.

U. S. GOVERNMENT

Wormseed Ceiling Price.—The Office of Price Administration has specified \$4.50 a pound as the producer's ceiling price of oil of chenopodium as of Oct. 6, 1944. The price between dealers is set at \$4.72 per pound, and for dealer's sales to users at \$5.00 per pound for quantities over 50 pounds.

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Equine Encephalomyelitis Incidence.—Supplementing previous reports on the incidence of equine sleeping sickness in 1944, Chief A. W. Miller, U. S. Bureau of Animal Industry, releases the following figures as of September 29:

Reported	up to	August	19	 	.1,305
Reported	after	August	19	 	3,007
Total Jan	. 1 to	Sept. 29)	 	4,312

Figures for the chief centers of infection were:

Nebraska				*									*		*			997
Iowa																		860
Minnesota				*	*			*		*	*		*					533
Missouri .																		284
Kansas																		264
South Dak	0	t	a		*		*											231
Colorado .																		209
Illinois																		107
California									*						*			105

Important numbers of cases (less than 100) occurred in Oklahoma, North Dakota, Texas, Idaho, and Louisiana. Sixteen states were exempt.

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Army.—In accordance with tentative specifications, the Veterinary Corps supervised the processing and packing of 6,500,000 lb. of Cheddar cheese, from Oct. 15, 1943, to April 1, 1944, and contracts were let for processing 6,225,000 lb. more by the end of June, to be packed in 7-lb. tin cans.—From the Bulletin of the U.S. Army Medical Department, July 1944.

Army Remount Service.—The Army Horse Breeding Plan of the remount service, Quartermaster Corps, brought a total of 11,066 foals into being in 1943. Of these, 10,551 were sired by Thoroughbred, 264 by Arabian, and 31 by American Saddle Horse stallions. This was a 20 per cent reduction compared with the aver-

age of the last three years. The expectancy for 1944 is 8,600 foals. The decrease is attributed to the shortage of farm manpower. The Army furnishes the stallions; the farmers furnish the mares. A small fee is charged but the owners of the mares become the owners of the foals.

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Egyptian Physician Honored.—By order of the President, the United States of America Typhus Commission Medal was awarded to Dr. Abdel Wahed El Wakil, Egyptian Minister of Health, and to three British Brigadiers of the Royal Army Medical Corps for their coöperation in the work on typhus fever in the Middle East and southern Italy.

AMONG THE STATES

Alabama

The latest journal of the veterinary circle is Jawbone, official organ of Zeta Chapter, Omega Tau Sigma, of the Alabama Polytechnic Institute; Vol. I, No. 1 of which is dated August 1944. The issue has 20 pages, 12 inches by 9 inches, of well-illustrated material: technical, collegiate, fraternal, and commercial (4 ads.). Original? Well, yes. It seems to have coined the word "postmortician."—Incog.

Australia

Bovine Tuberculosis.—The Stock and Brands Department is charged with the handling of bovine tuberculosis but only when and if requested by owners. Tuberculin testing and appraising reactors are done by government veterinarians free of charge but, owing to the cost of travel, owners must assemble the cattle in such a way that at least 250 can be tested in one day. Reactions are read on the fourth day. Owners receive 75 per cent of an appraised value not exceeding £20.—Journal of the Department of Agriculture of South Australia.

California

Rationing Lamb.—Advantageous changes in lamb rationing, whereby utility grade of lamb was put at zero point value by the War Food Administration, were brought about largely through the efforts of Dr. C. U. Duckworth, assistant director of the State Department of Agriculture, according to the California Wool Grouper.

Illinois

Northern Association.—For the autumn meeting of the Northern Illinois Veterinary Medical Association, held at Hotel Faust, Rockford,

Sept. 27, 1944, Secretary W. D. Daugherty announced the following program to succeed the opening address of President A. A. Turner:

H. C. Smith, Allied Laboratories, Sioux City, Ia.: "Some Types of Swine Enteritis."

P. H. Phillips, University of Wisconsin: "Recent Developments in Nutrition as It Relates to Farm-Animal Diseases."

C. S. Bryan, Michigan State College: "Some Phases of the Bovine Mastitis Problem."

Luncheon and social hour for the Ladies Auxiliary and a banquet in the evening rounded out the proceedings.

S/W. D. DAUGHERTY, Secretary-Treasurer.

Indiana

Purdue Short Course.—The announcement of the Thirty-Second Annual Short Course for Veterinarians, Purdue University, Oct. 5-6, 1944, contained the following curriculum:

F. C. Tucker, Claypool: "Diseases of Poultry."

P. T. Engard, Marysville: "Sheep Practice."

R. A. McIntosh, Ontario Veterinary College: "Sulfa Drugs in Veterinary Practice," and "Acetonemia of Cattle."

B. H. Edgington, Ohio Agricultural Experiment Station, Reynoldsburg: "Diseases of Swine."

B. J. Killham, Michigan State College: "Are We Controlling Bang's Disease?"

James Farquharson, President American Veterinary Medical Association, Colorado State College: "Large Animal Surgery." (Film).

Hon. George W. Gillie, Fort Wayne: "The Business of the Wartime Congress." (Banquet address).

Frank R. Hall, Purdue University: "Where Do We Go from Here?" (Banquet address).

J. L. Axby, State Veterinarian, was the toast-master.

The Sheep and Swine Clinic, Large Animal Clinic, and Poultry Clinic were directed by J. F. Bullard, Purdue University. Demonstrations were made of the collection of blood samples in swine, semen sample in bulls, and a demonstration of artificial insemination was made.

lowa

Southwestern Association.—The fall meeting of the Southwestern Iowa Veterinary Medical Association was held at Council Bluffs, October 3, 1944. The following technical program was announced:

L. W. Schwarte, Iowa State College: "Some Conditions Under Which Corn Is Toxic to Livestock."

R. L. Cundal, Fairfax, Mo.: "Swine Practice." Lee M. Roderick, Kansas State College: "Bovine Hemoglobinuria."

The officers for the fiscal year are: Hugh

Fitch, Missouri Valley, president; Robert J. Haxby, Clarinda, vice-president; Russell S. Beaver, Harlan, secretary-treasurer.

s/ R. S. Beaver, Secretary-Treasurer.

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Sale of Vitamins Restricted.—The attorney general has ruled that single vitamins such as mins such as A, B₁, B₂, G, C, and D, can be sold legally only by licensed drug stores under the directive of a registered pharmacist. Because proprietary medicines are exempted, under the Iowa law, from any restrictions being thrown around them, combinations of vitamins cannot be included in the ruling.—From Drug Topics.

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Equine Encephalomyelitis.—The Advisory Committee of the Eastern Iowa Veterinary Medical Association reported, as of September 17, that because farmers neglected to vaccinate their horses, the disease broke out in epizoötic form in a large number of counties of that region, and that hog cholera had taken on a threatening aspect in several places.

Kansas

Hog Crop of '44.—The Kansas Stockman reports that the 1944 hog crop of Kansas will be little more than half that of 1943. The number of sows farrowing in the spring was 199,000 compared with 369,000 in 1943. For the whole country, the estimated number of pigs (saved), from December 1943 to June 1944, was 55,925,000 which is 24 per cent below the record spring crop for 1943.

Kentucky

Harry H. Myers (O.S.U., '07), has retired after thirty-seven years with the United States Bureau of Animal Industry. Thirty years of this time Dr. Myers spent with the Bourbon Stock Yards, Louisville. For his faithful service, his friends and associates honored him with a banquet at the Kentucky Hotel. W. C. Glockner (U.P., '20), of Owensboro, succeeds Dr. Myers.

8/F. M. KEARNS.

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Alsab Retired.—Alsab was retired for disability in August at the age of 5 to take his place among the famous Kentucky sires. At the age of 4, Alsab had won over \$350,000, of which \$110,000 was won as a 2-year-old. Among the big events won were the Preakness and New York Handicaps and the American Derby.

Massachusetts

State Association.—The Massachusetts Veterinary Medical Association met Sept. 27, 1944, at Springfield. The following technical program was presented:

Frank H. Baehr, M. D.: "Subtotal Gastrectomy and Appendix." (A color film).

H. W. Peirce: "How the Veterinary Profession Is Helping in the War Effort." (Abroadcast).

G. A. Lester, Reading: "Bees."

B/ H. W. JAKEMAN, Secretary.

Minnesota

Dr. George C. Nugent, formerly of Gloucester, Mass., has taken over the practice of the late Dr. K. E. Larson of Willmar, Minn.

Mississippi

Says a Philadelphia (Miss.) correspondent to Drug Topics: "So thoroughly has Mr. Hamill [the druggist] studied veterinary medicine that he can diagnose most of the known diseases accurately and, when necessary, vaccinate and inoculate customers' livestock himself." And, he goes on to tell the world, "sales of animal and poultry products have increased 200 per cent."

Scientists Grow Colored Cotton.—Russian research men at the Delta Experiment Station have succeeded in growing naturally colored cotton. Fast colors in red, green, auburn, dark brown, blue, and khaki can be grown, the Russians claim. Some of this colored cotton has been made into yarn by hand in the experimental work.—The Catalyst, cited by Science Digest.

New Jersey

Research at Rutgers.—Rutgers University has established a Research Council to strengthen its research program, to facilitate and encourage research in departments where none is conducted, to place the Council at the disposal of the State and its industries, and to readjust the teaching load of various departments by disposing of duplications.—From Science.

New Zealand

At the annual meeting of the New Zealand Veterinary Medical Association, in June, 1943, the danger of importing the virus of hog cholera into the swine herds of the islands was discussed. Lt. Colonel Boulton, V. C., U. S. Army, guest of the meeting, remarked that such a danger exists provided proper care is not taken in disposing of pork refuse. The Colonel spoke on the inspection of foodstuffs

by the veterinary service of the Army of the United States.

The Association supported a movement to frame farming opinion on the urgent need of increasing the veterinary service and recommended that a veterinary school be established in connection with the Agricultural College. It was estimated that the Dominion should have 240 veterinarians: 170 for the cow population; 30 for horses, dogs, and sheep; and 40 for the Department of Agriculture, which would require that 15 to 16 freshmen enter the college annually. The question of cost was weighed against subsidizing oversea scholarships amounting to £120 per year for each student.

North Carolina

Agar Production.-The shortage of agar on account of war is partly improved by commercial production along the Atlantic Coast near Beaufort where an abundance of the red alga, Gracilaria confervoides, (L.) Greville, was discovered in 1942 by Duke University Marine Laboratory. From 1.000 to 1.500 tons (wet weight) have been harvested, dried, and sold to processing plants by fishermen, to whom the weed is a net-fouling nuisance. During the last five months of 1943, the yield in agar was 60,000 lb. While agar made from G. confervoides is not identical with that from the genus Gelidium, of California and Japan, it is similar enough to be referred to as agar, and has greater gel strength and elasticity.

Ohio



These prominent veterinarians gathered at WLW's "Everybody's Farm," near Cincinnati, to hear Dr. D. C. Hyde, assistant state veterinarian for Ohio, when he was a guest on a recent Saturday broadcast of the livestock health series entitled "Keep 'Em Healthy." Dr. Hyde discussed the duties and functions of the Division of Animal Industry and its work in maintaining the health of farm animals. Left to right: Roy Battles, WLW program director; Dr. A. G. Madden, Modeira; Dr. R. G. Kerns, Middletown; Dr. Hyde; Dr. S. W. Stout, Hamilton; and Dr. L. H. Bremer, Middletown.

"Keep 'Em Healthy" Series.— The State Association is sponsoring the following broadcasts, subject to change, on the dates indicated over station WLW in the "Keep 'Em Healthy" series:

October 28: "Vaccination of Hogs"—R. E. Headley, of Oxford.

December 9: "Blood Testing of Poultry"—S. W. Stout, of Hamilton.

January 20: "Pregnancy Disease in Sheep"
-P. T. Engard, of Marysville.

March 3: "Calf Scours"—Geo. W. Lies, of Fort Recovery.

April 14: "Brooder Diseases"—E. M. De-Tray, of Napoleon.

May 26: "How Livestock Diseases Are Spread"—E. W. Porter, of Reynoldsburg.

New York

New York City Association.—The regular meeting of the Veterinary Medical Association of New York City, Inc., was held at the Hotel New Yorker Wednesday evening, Oct. 4, 1944. Dr. Finkelstein presided. The speakers were:

C. R. Schroeder, D.V.M. (Lederle Labs.): "Classification of the Phenomena of Specific Sensitivity in Lower Animals."

Matthew Brunner, M.D., Allergist and Immunologist, Brooklyn Jewish Hospital, discussed the paper and explained the physiology, pathology, and clinical application of allergy.

The following guests were present: Matthew Brunner, M.D., Jewish Hospital, Brooklyn; J. R. Cortez, M.D., Mexico; John G. Hardenbergh, D.V.M., Chicago; Dr. B. A. Linden, Dr. Vine, and Mrs. Paul Einhorn.

Dr. James Farquharson, president of the AVMA, is expected to be the speaker at the January meeting.

Oregon

State Association.—The Oregon Veterinary Medical Association met Sept. 20, 1944, at Salem. The following program was presented:

Stanley Phillips: "Report on the 81st Annual AVMA Convention in Chicago."

O. H. Muth: "A Disease of Cattle Associated with Hypomagnesemia."

J. W. Shaw: "So-Called Rye Grass Staggers in Oregon Sheep and Cattle," Also movies.

S. L. Brown: "Mastitis in Cattle."

Clarence Milleson: "Practical Suggestions in Handling Every Day Small Animal Practice." Followed by general discussion on small animal probems.

Raymond R. Staub, Portland physician and surgeon: "Brucellosis as Seen by the Physician-Farmer."

s/WM. E. Ruggles, Secretary.

Tennessee

Not So Cheap.—A Munford druggist writes an article for Drug Topics explaining how to boost sales of livestock remedies as follows: (1) flashers on local movie screens to illustrate the use of serums, vaccines, and viruses for animal and human diseases; (2) movie flashers to emphasize means for preventing diseases; (3) window displays; (4) public exhibitions; (5) store clinics; and (6) lending syringes, needles, and worming instruments to livestock owners. . "These screen shorts curtailed a rables epidemic last year and sold 39 treatments at \$15 a treatment." This druggist keeps cats, dogs and calves in his store to demonstrate his methods. A picture of a Holstein-Friesian calf and two carnivores in front of the drug counter accompanies the article.

Texas

Dr. Hamorsky Wounded in Italy.—Dr. Kalman R. Hamorsky, former veterinarian of Clifton, and alumnus of Texas A. & M. College, is a casualty of the American operations in Italy. He joined and served in the Thirty-Sixth Division as a private, "fighting mad at the Germans for taking over his native country, Hungary," says Texas Veterinary Bulletin. Before being evacuated to McCloskey General Hospital at Temple, in July, he had learned that his father and mother were among the victims of the Nazis.

Wisconsin

Southeastern Veterinary Medical Association.

—A dinner meeting was held at the Whiting Hotel, Berlin, Wis., on Sept. 14, 1944, at which 50 members were present. W. Wisnicky, guest speaker, advocated arranging for a short course at the University for graduate veterinarians. This prompted a lively discussion. It was decided that arrangements would be attempted.

S/JAMES S. HEALY, Resident Secretary.

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North Central Veterinary Medical Association.—A clinic and banquet were held at Rice Lake, Wis., on Sept. 16, 1944. James S. Healy was the speaker of the evening and the following veterinarians participated in the clinic: E. N. Liljeberg, Grantsburg; G. B. Kramschuster, Bloomer, and S. K. Andreassen, Menomonie. The discussions centered around the feasibility of having a short course for graduate veterinarians at the University, and the part that vaccination should play in the control of brucellosis in livestock. Approximately 50 members were present.

8/JAMES S. HEALY, Resident Secretary.

THE VETERINARY PROFESSION AND THE WAR

Policy Statement Regarding Procurement and Assignment Service

Paul V. McNutt, chairman of the Man Warpower Commission, issued the following statement on the policy adopted by the Directing Board of the Procurement and Assignment Service of the War Manpower Commission at a meeting on September 23:

"The war is not yet over and we must continue our efforts to keep the armed services supplied with a sufficient number of doctors, dentists, and nurses to meet the critical needs of this period of the war and also fulfill our obligation to the home front.

"In common with the other divisions of the War Manpower Commission, however, the Procurement and Assignment Service is coöperating with those charged with the responsibility for developing demobilization plans. In view of the information collected incident to the mobilization of our medical resources for war, this office can perform many useful services in connection with these demobilization plans in the interest of the members of the professions now in service. The War Manpower Commission wishes to be of whatever service possible but, in common with all war agencies, has no interest in perpetuating its controls beyond the period necessary."

In order that the point of view of the Directing Board of the Procurement and Assignment Service may be understood by the doctors, dentists, veterinarians, sanitary engineers, and nurses, the following statement of policy was adopted at its meeting on September 23:

- 1) The Procurement and Assignment Service is an organization which was created at the request of these professions to meet a war problem, and in meeting its responsibilities this service has had the support of these professions.
- 2) As a war agency, this service is discharging and will continue to discharge its obligations until the end of the war. It will coöperate with the agencies concerned with the effective utilization of the individual members of these professions who are demobilized before the end of the war.
- 3) In the directive under which it was created, the responsibilities of the Procurement and Assignment Service did not extend beyond the duration of the war.
- 4) Therefore, it does not contemplate dealing with peacetime demobilization but will continue its activities, including coöperation with agencies working on demobilization plans, so long as the war continues.

The members of the Directing Board are Drs. Frank H. Lahey, chairman, Harvey B. Stone, vice chairman, C. Willard Camalier Jr., Harold S. Diehl, James E. Paullin, and Abel Wolman.

STATE BOARD EXAMINATIONS

Florida—The Florida State Board of Veterinary Examiners will hold its next examination at the Hotel George Washington, Jacksonville, Fla., Nov. 13-14-15, 1944. Address inquiries to H. C. Nichols, secretary-treasurer, Ocala, Fla.

COMING MEETINGS

Connecticut Veterinary Medical Association. Meriden, Conn., Nov. 1, 1944. G. E. Corwin, 36 Capitol Ave., Hartford, Conn., secretary.

Short Course for Veterinarians. University Farm, University of Minnesota, St. Paul 8, Minn., Nov. 1-2, 1944. W. L. Boyd, Division of Veterinary Medicine, University Farm, head.

Midwest Small Animal Association. Hotel Burlington, Burlington, Iowa, Nov. 2, 1944. Wayne H. Riser, 17th St. at Ingersoll, Des Moines, Iowa, secretary.

Short Course for Graduate Veterinarians. Veterinary Bldg., Missouri College of Agriculture, Columbia, Mo., Nov. 9-10, 1944. A. J. Durant, Department of Veterinary Science, Missouri College of Agriculture, head.

Interstate Veterinary Medical Association. Warrior Hotel, Sioux City, Iowa, Nov. 14-15, 1944. H. C. Smith, Allied Laboratories, Sioux City, Iowa, secretary.

Mississippi Valley Veterinary Medical Association. Hotel Custer, Galesburg, Ill., Nov. 15-16, 1944. L. A. Gray, Bushnell, Ill., secretarytreasurer.

United States Live Stock Sanitary Association. LaSalle Hotel, Chicago, Ill., Dec. 6-7-8, 1944. R. A. Hendershott, Trenton, N. J., secretarytreasurer.

Cornell University. Annual Conference for Veterinarians, New York State Veterinary College, Ithaca, N. Y., Jan. 3-4-5, 1945. M. G. Fincher, New York State Veterinary College, acting dean.

Kentucky Veterinary Medical Association. Agricultural Experiment Station Farm, University of Kentucky, Lexington, Ky., Feb. 1-2, 1945. F. M. Kearn, 3622 Frankfort Ave., Louisville 7, Ky., secretary-treasurer.

Southern Veterinary Medical Association. There will be no meeting held in 1944. L. A. Mosher, P. O. Box 1533, Atlanta, Ga., secretary.

MARRIAGES

Dr. Edwin J. Jenney (WASH., '43), Walla Walla, Wash., to Miss Elmerine Widman, Rosalia, Wash., Aug. 24, 1944.

BIRTHS

To Dr. (A.P.I., '43) and Mrs. C. D. George, 700 Tootwood Ave., Columbia, Tenn., twin girls, July 26, 1944.

To Dr. (WASH., '44) and Mrs. Lewis J. Campbell, 624 M St., Grants Pass, Ore., a son, William John, Aug. 28, 1944.

DEATHS

Henry W. Dustan (Corn., '98), 66, Morristown, N. J., died Sept. 30, 1944. Dr. Dustan was dairy inspector for Morristown since the inception of the office. He had been a member of the AVMA since 1899.

Colin B. Hawes (C.V.C., '18), of Poplar Grove, Ill., died Aug. 16, 1944. He had been in poor health for some time but continued his practice up to the time of his death.

Robert W. Hoggan (O.V.C., '08), 60, of Salt Lake City, Utah, died Sept. 26, 1944. Dr. Hoggan gave up his private practice in 1917 to become state veterinarian. He later joined the Parke Davis Co., as field veterinarian, a position which he had held for the past twenty-five years. From 1912 to 1916, Dr. Hoggan was secretary of the Utah Veterinary Medical Association. He was admitted to the AVMA in 1938.

A. B. McCapes (Ont., '88), of Fruita, Colo., died Sept. 23, 1944. Dr. McCapes practiced in South Dakota before going to Colorado in 1898. He was the first state veterinarian of Colorado.

Ida May Miller, wife of Dr. S. T. Miller of Wenatchee, Wash., died Sept. 18, 1944. The Millers had been married for fifty-four years.

Horatio L. Van Volkenberg (Corn., '18), 51, professor of parasitology and head of the Department of Agriculture at the Agricultural Mechanical College of Texas, College Station, died suddenly Oct. 13, 1944. Burial services were held at Bryan, Sunday, October 15.

The educational field has been robbed of a most ardent worker and a brilliant mind in the death of Dr. Van Volkenberg. His early scientific career was associated with Cornell University where he received his D.V.M., B.S., and M.S. degrees. Dr. Van Volkenberg's experiences in the field of science were varied. Among the important positions which he held were: assistant biologist at the Bureau of Biological Survey, U. S. Department of Agriculture; special investigator for the Bureau of Fisheries, Alaska; and in 1926 he accepted the position of parasitologist at the Experiment Station, Puerto Rico, U. S. Department of Agriculture, where he served until 1937 when he joined the staff of Texas A. & M. His professional connections included membership in the Society of Parasitology, and the AVMA, of which he had been a member since 1919.

COMMITTEE REPORTS

Adopted at the Eighty-First Annual Meeting August 22-24, 1944

Standing Committees

Education

There are enrolled at the time of this report May, 1944) in the ten American and in the two Canadian veterinary colleges, exclusive of preveterinary students, 2,057 students. Four hundred and fifty of this number are freshmen (Iowa State does not have a freshman class this quarter). The total enrollment is 357 less than for the peak year 1940-41 (J.A.V.M.A. 97, (1940): 634). Nine of the twelve colleges reporting preveterinary students reported 238. During the year May 1, 1943 to May 1, 1944, there were 598 graduates.

One member of the committee (Dr. Hurt) has expressed concern over the relatively small proportion of the graduates entering practice. tion was raised too late for the Committee to get a report from the deans for this report. The figures are available for one college (Michigan State). For the thirty-year period ending June, 1943, the graduates of this school have placed themselves as

Practice Federal, State and Municipal	
Teaching, Research and Ext	
Army	3.7%
Commercial	
Human Medicine	
Miscellaneous (no connectio	
veterinary medicine)	1.4%

The percentage given for the Army is larger than it would be under normal conditions due to the relatively large proportion of the 1941, 1942, and 1943 classes entering this service. We should add that at this time there are approximately 25 per cent of the alumni of Michigan State serving in the armed forces, having entered the service from other activities. It is hoped that the Committee next year will obtain data from the deans revealing the placement of the graduates for the last twenty-five or thirty years.

The School of Hygiene of the University of Toronto has provided a curriculum for graduates of recognized schools of veterinary medicine leading to the degree of D.V.P.H. (Diploma in Veterinary Public Health). The course of instruction extends over a college session of eight months and will be provided by the School of Hygiene and departments of the Exculty of Medicine and Exculty of Arts the of the Faculty of Medicine and Faculty of Arts, the School of Social Work, and the Ontario Veterinary College in the following subjects:

Bacteriology and immunology and virus infec-tions; parasitology, including entomology and helminthology; epidemiology and biometrics; physiological and industrial hygiene; nutrition; public health chemistry; public health adminis-tration, including food control, public health education, social science.

An additional two months of field training is

required which may be taken under the supervision of a recognized department of health.

In March, 1943 (J. A.M.A. 121, (1943): 839) the Council on Pharmacy and Chemistry of the A.M.A. announced "that in future editions of New announced "that in future editions of New and Non-Official Remedies, Useful Drugs, the Epitome of the U. S. Pharmacopeia, and in the Interne's Manual, as well as the Council's other publications, the metric system only will be used and that conversion tables for the apothecary system will be included in all publications."

The Council published a more lengthy statement

The Council published a more lengthy statement concerning this announcement in the *Journal* of the A.M.A. (Dec. 1943: p. 900). "The American phar-A.M.A. (Dec. 1943: p. 900). "The American pharmaceutical profession" so states that *Journal* (Vol. 125, No. 3) "adds strong support by suggesting the deletion of all reference to the apothecaries system from the official compendiums the U. S. Pharmacopeia and National Formulary, except for conversion tables during the transition period." It is suggested that the House of Representatives of the AVMA take cognizance of this action of the Council on Pharmacy and Chemistry of the A.M.A. and the suggestion of the American Pharmaceutical profession and make such recommendations as it deems appropriate.

Last fall Major Russell McNellis, of the American Embassy, Lima, Peru, a member of the AVMA, directed a letter to the AVMA calling its attention to the activity of the Joseph G. Branch Institute of Engineering and Science of Chicago, Ill., advertising in the newspapers of South America, among other courses, "an extension" course in veterinary medicine. Major McNellis pointed out that the activities of this "correspondence school" in his opinion were inimical to good relations between the United States and South American countries. It appears that this "institute" is limiting its activities, in so far as veterinary medicine is concerned, largely to Latin America. However, the Committee has on file copy of a letter alleged to have been written by a pros-pective student of Waukegen, Ill., Oct. 10, 1943, asking among other things if a diploma of Doctor in Veterinary Medicine is given and could he practice in Illinois in case he completed the course. The in Illinois in case he completed the course. The alleged reply to this letter, in Spanish, is in possession of the Committee. In the alleged reply, it is stated "that on completing the course we give you your diploma." "Doctor in Veterinary Medicine" is not included in the reply. With reference to the question, "Could he practice in Illinois", the following paragraph is quoted from the alleged reply:

'It will probably be necessary that you pass an examination before an examining board in order to get a license to practice veterinary medicine in the State of Illinois. It is not sufficient to be a graduate of a university or accredited school to practice your profession in this state. You will probably be permitted to practice in other states in this country, but also in your country and other countries without passing an examining board as is

required in Illinois."

One of our Committee (Dr. Hagan) has spent considerable time in Washington in an attempt to effectively inform the countries of South America as to the status of this institute and that it is not recognized as an accredited veterinary school by any of the existing accrediting agencies of the United States. At the time the activities of this Institute came to the attention of the committee, it did not know that the Federal Trade Commission had on January 5, 1943, held a hearing on a complaint against this Institute. On February 29, 1944, the United States Circuit Court of Appeals upheld the Commission's order to the Institute to cease and desist. After that date, Mr. Branch filed a petition for rehearing which was denied and a decree was entered by the Court on March 30, 1944, affirming the Commission's order to cease and desist. This order became final on June 30, 1944.

Under date of February 11, 1944, Executive Secretary Hardenbergh addressed a letter to the deans of veterinary colleges and to the Committee on Education concerning the problem of veterinary text books and asked for opinions concerning this problem, what should be done, if anything, about it and how should it be done. Replies from five deans were forwarded by Dr. Hardenbergh to the Com-mittee on Education. Each of the deans replying mittee on Education. Each of the deans replying expressed the opinion that definite improvement was in from a few to many specific needed respectively. Three of the deans replying favored the appointment of a committee to make a further study of this problem, attempt to determine the most urgent needs, and secure suitable authors. None offered any objection to such a committee.

It is the recommendation of the Committee on Education that a committee be appointed to make a further study of this problem and formulate plans, if possible, that will result in the attainment of the desired objectives. It is the opinion of the Committee on Education that the committee should consist of representatives of the veterinary faculties who have had experience in writing veterinary texts

or other scientific publications.

The School of Veterinary Medicine, Middlesex University, was inspected June 1, 1944, by Drs. Boyd, McGilvray, and Hallman. The Committee

recommends that the school be not approved for the

following reasons:

 It appears that the only resources for main-tenance and operating expenses are student fees. "Essentials of an Acceptable Veterinary Article 5, School", which is a part of the Committee on Education report for 1941 and which was adopted by the House of Representatives in session at Indianapolis reads as follows:

"Resources.—Experience has shown that modern medicine cannot be acceptably taught by schools which depend solely on the income from students' fees. No veterinary school, therefore, should expect to secure approval if it does not have a substantial income in addition to students' fees".

The above quoted paragraph expresses the opinion

of your committee

2) It is the opinion of your committee that the faculty organization does not meet the requirements of article 2 of the 1941 report. While there are now three or possibly four faculty members of unquestionable ability and with some academic experience, the remainder of the faculty consists of men without adequate academic experience. It appears to your committee that without other resources than student fees there can never be sufficient security of tenure to attract and hold an adequate repurpose of feesility and adequate number of faculty members of ability and academic experience.

3) The facilities and material for clinical instruction do not impress the Committee as adequate for

the proper training of men for general practice.

The Committee recommends that the following

colleges be placed on the accredited list of this association for the coming year and their graduates be eligible for membership in this association:

1) Alabama Polytechnic Institute, Division
Veterinary Medicine.

Division

Colorado State College, Division of Veterinary

 École de Médecine Vétérinaire de la Province de Québec, Université de Montréal.
 Iowa State College, Division of Veterinary Medicine.

Kansas State College, School of Veterinary Medicine.

Michigan State College, Division of Veterinary Medicine. New York State Veterinary College, Cornell

University.
The Ohio State University, College of Veter-

inary Medicine. Veterinary College, University of Ontario

Toronto. 10) University of Pennsylvania, School of Veter-

inary Medicine. 11)

Texas Agricultural and Mechanical College, School of Veterinary Medicine. 12) State College of Washington, College of Veter-

inary Medicine.

s/E. T. HALLMAN, Chairman W. L. BOYD C. D. MCGILVRAY L. M. HURT

Legislation

The principal activity of the Committee during the past year had to do with the reclassification of federal veterinarians as finally approved by Congress on June 19, 1944. A fairly complete account of this work, which was a collaborative effort on the part of the AVMA, its constituent associations, and a number of organizations concerned with the production of livestock and the control of livestock diseases, was published as an editorial and lead article in the JOURNAL for August (1944), pages 57-66

The Committee expresses its gratitude to many organizations which responded to the call for assistance and to the many individuals who effectively cooperated after the AVMA "set the ball rolling." The favorable outcome is a splendid example of the good will and influence which can be exerted by a small, but united, profession in its relationships with the livestock industry which it What we could not hope to accomplish by ourselves, working alone, was made possible by the support of those who benefit by and believe in the veterinary service.

The benefits to be derived from the reclassification are obvious; in terms of the federal veterinary services, it will mean improved morale, better qualified personnel and increased efficiency; in terms of the individuals affected, it will mean an improved promotional status and the stimulus which derives from an equitable and more adequate compensation In this connection, the upgrading for services. means, it is estimated, an average increase in annual pay for federal veterinarians of about \$400, and for some supervising inspectors of about \$1,200.

The following individuals, among many, special mention for their efforts in the long reclassification struggle: W. A. Hagan, chairman of a special committee of the Executive Board, to which the problem of upgrading federal veterinarians was assigned for study and action in 1942; Will J. Miller, Live Stock Commissioner of Kansas who, almost single-handed, marshalled the support of some twenty national and state livestock and producer organizations behind the measure and, in addition, spent many days in Washington in personal conferences in its behalf; President C. W. Bower, Pres.

Elect James Farquharson and Executive Board Chairman O. V. Brumley, who, as the Board of Governors, kept in constant touch with the situation and exerted themselves in hearings and with indi-

vidual members of the Congress

Since some of the most effective work was done by a member of this committee, the chairman and other members are privileged to give special credit to the Hon. George W. Gillie, veterinarian and rep-resentative in Congress from the 4th Indiana district. His advice, his acumen in guiding the sup-portive efforts in Congress, his speeches on the floor of the House, and the personal and joint appeals he made to his colleagues in the final hours of the

reclassification fight were decisive.

Another measure before Congress which has the attention of the Committee is the Miller Bill (H.R. 5128). This bill provides for an amendment attention to the Selective Service and Training Act of 1940 so that there shall be deferred from the draft each year a sufficient number of students to enter medical and dental schools to meet the nation's needs. The present policies of Selective Service have largely deprived our educational institutions of pre-medical, pre-dental and pre-veterinary material for entering classes to meet the critical future needs for physicians, dentists, and veterinarians. Moreover, President Roosevelt has declined to recommend any change in this policy, which is looked upon as a grave situation by thoughtful leaders in medicine and veterinary medicine.
Since the Miller Bill, as introduced, covers only

medical and dental students, Congressman Gillie has asked that veterinary students be included by its sponsor. If this is not done, Dr. Gillie will propose a suitable amendment when it comes to the

floor of the House.

There is pending in Congress a bill 90 pages long and containing roughly 17,000 words, that makes the doctors of America shiver. In brief, this bill proposes that the Federal Government spend \$3,000,000,000 more per year than it does now for medical care and hospitalization of the people in general.

The veterinary profession would do well to look to its laurels and do everything possible in an en-deavor to curtail socialized medical and veterinary

medical service in this country.

In conclusion, the Committee recommends that provision be made in the current budget to provide "legislative information service" through a suitable agency in Washington, whereby prompt notice will be given to the Committee on Legislation and the central office of any bills or other govern-mental agency measures which are significant to the veterinary profession in any way.

J. G. HARDENBERGH, Chairman GEORGE W. GILLIE WM. H. IVENS, SR. C. C. FRANKS E. M. GILDOW

Resolutions

Resolution No. 1

Death uninvited, opposed but resistless, has during the past year taken some of our most valued members.

On January 7, 1944, a leader in the person of David S. White was so taken. His was a notable career as a scholar, educator, author, and civilian and army administrator.

He was the first dean of the College of Veterinary Medicine, The Ohio State University—from 1895 to 1931 —and he placed it on its firm foundation of high professional soundness. He was, until 1919, chief veterinarian of the American Expeditionary Forces during World War I, and because of his services he was decorated by both France and Great Britain. He was president of the

American Veterinary Medical Association during the year 1920-21.

Therefore, it is resolved that the American Veterinary Medical Association, in convention assembled, does hereby express its sorrow and extends its sympathy to his surviving relatives and friends. A copy of these resolutions is to be spread on the official minutes, and another copy is to be forwarded to his widow.

Resolution No. 2

In view of the fact that some animal diseases, foreign to American shores (surra, leishmaniasis and others), may conceivably be introduced by the importation of non-quarantined and veterinary non-inspected pet animals, and

WHEREAS, all possible threats to human and livestock health and welfare in America must be closely guarded

Against, therefore, be it
RESOLVED, that the American Veterinary Medical Association, for the protection of human and animal welfare, urges that the importation of all animals that are not now subjected to importation regulations be stopped unless a careful and rigid quarantine and an exacting veterinary examination fail to disclose in such animals the presence of infectious, contagious, or communicable disease.

Resolution No. 3

It having come to the attention of the American Veterinary Medical Association that there seems to be an inclination in some lay individuals to doubt the necessity of maintaining the present proved measures for the control of animal tuberculosis, and

WHEREAS, any relaxation in the enforcement of these valued procedures and regulations is bound to be followed

by an increase in animal tuberculosis, and

WHEREAS, American livestock is now practically free

from tuberculosis, and

WHEREAS, this freedom is also reflected to a large extent in a lower incidence of tuberculosis among humans, therefore, be it

RESOLVED, that the American Veterinary Medical Association is unalterably opposed to the lowering of the present standards that have been demonstrated to be so effective in the control of the insidious, contagious, and communicable (communicable from animal to animal, and from animal to man) disease, tuberculosis.

Resolution No. 4

WHEREAS, during recent years, much favorable and valuable publicity has been obtained for the American Veterinary profession by the frequent publication of certain artistically designed and carefully and modestly worded advertisements appearing in the agricultural, and lay and professional press-these advertisements being sponsored by some of America's leading commercial veterinary supply and manufacturing individuals and firms-

WHEREAS, these advertisements keep the general public informed regarding the value of the services of veterinarians, as well as enhancing the favorable estimation of the

public for veterinarians, therefore, be it

RESOLVED, that the American Veterinary Medical Association, in convention assembled, hereby express its appreciation to the several individuals and firms that are sponsible for this very fine and constructive publicity program.

Resolution No. 5

WHEREAS, it is the conviction of the American Veterinary Medical Association that some animal-disease outbreaks in America are the direct result, in a measure, of the unrestrained distribution of certain potentially dangerous animal-disease producing factors—particularly viruses and living bacteria in the nature of vaccines, and

WHEREAS, these products in the hands of those not entirely familiar with them are potentially dangerous and a menace to the livestock industry, therefore, be it RESOLVED, that the American Veterinary Medical Asso-

ciation, in convention assembled, condemns as dangerous to the livestock industry the distribution of all viruses, vaccines, bacterial cultures and comparable agents to those

individuals or organizations not fully familiar with their potentially dangerous character, and be it further

RESOLVED, that we urge all law making bodies, and regulatory officials concerned with the control of animal diseases to resort to all possible measures to restrain the use of potentially dangerous animal-disease producing factors (viruses, living vaccines, bacterial cultures and comparable agents) so that only those qualified by study and experience as demonstrated by a legal license may be authorized to apply the agents in question (viruses, living vaccines, bacterial cultures and comparable agents) to the control and prevention of animal diseases.

Resolution No. 6

(Not passed by House of Representatives; see Proceedings. The JOURNAL, Oct. (1944): 262.)

Resolution No. 7

WHEREAS, a directive of April 11, 1944, issued by the officers of the National Selective Service System states, among other things, that only those preprofessional students that can complete their preprofessional studies by June 30, 1944, and only those students actually enrolled on July 30, 1944, in a professional curriculum (medical, dental or veterinary), may be deferred from the provisions of the national Selective Service Act for the purpose of completing either their preprofessional or their professional studies, and

Whereas, this action will not only seriously jeopardize the enrollments in veterinary colleges with a possible disruption of their faculties, but also it will seriously limit the numbers of students to be graduated as veterinarians, thus endangering the livestock industry, the meat food supply of the nation, and even human health (the veterinarian is the official inspector of meats, he prevents or eradicates and controls diseases of animals transmissible from animals to man such as tuberculosis, brucellosis and others); therefore, be it

RESOLVED, by the American Veterinary Medical Association, in convention assembled, that it views the limitations imposed by the Selective Service directive of April 11, 1944, with apprehension and alarm, and he it further

1944, with apprehension and alarm, and be it further RESOLVED, that the American Veterinary Medical Association will do all it can to obtain an amelioration of the provisions of the directive of April 11, 1944, in order to forestall the potential disasters mentioned in the second paragraph of this resolution.

Resolution No. 8

(Not passed by House of Representatives; see Proceedings. The Journal, Oct. (1944): 262.)

Resolution No. 9

WHEREAS, the Meat Inspection Service of the federal government—presumably as a war measure—was transferred by executive order early in 1943 from the U. S. Bureau of Animal Industry to the War Food Administration. Office of Distribution and

tion, Office of Distribution, and
WHEREAS, the American system of meat inspection was developed under the control and direction of the U. S. Bureau of Animal Industry to a point of superiority so that it has a world-wide reputation as a model of perfection and excellence, and

WHEREAS, the close cooperation formerly existing between the meat inspection branch and the field inspection branch, when both branches were under the direction of the U. S. Bureau of Animal Industry, cannot and does not exist now that these two branches are under different administrative control, a fact that is injurious to the best interests of the control of the transfer of the control of the control

interests of the people of the United States, and WHEREAS, the American Veterinary Medical Association is fully conversant with all of the phases of the questions involved in divorcing the meat inspection service from the administrative control of the U. S. Bureau of Animal Industria

Industry, and
WHEREAS, the American Veterinary Medical Association
is convinced that for the good of public health in America
and for the best interests of all concerned it is highly
desirable that the meat inspection service be returned for

administrative control to the fostering care and highly professional and technically trained environment of the U.S. Bureau of Animal Industry, therefore, it is RESOLVED, that the American Veterinary Medical Asso-

RESOLVED, that the American Veterinary Medical Association, in convention assembled, will, as an organization, and its members individually, use all means possible to cause the early return of the meat inspection service to its rightful birthplace in the U. S. Bureau of Animal Industry—a Bureau that has more than any other single agency given the American livestock industry its healthful animals, and the American public safe and wholesome meat food products.

Resolution No. 10

WHEREAS, the technical displays and committee exhibits at this 81st annual meeting of the Association have been

of outstanding quality and merit, and
WHEREAS, the public press and radio have extended excellent facilities and services so that much valuable information concerning the work of the veterinary profession in promoting public welfare has been made available to the general public, and

WHEREAS, the Committee on Local Arrangements has rendered most effective service in the preparation and conduct of this meeting; now, therefore, be it

RESOLVED, that the American Veterinary Medical Association, in convention assembled, does hereby express its appreciation and congratulations to all of the above mentioned persons and organizations and all others who have worked so faithfully and contributed so freely to insure the success of the meeting.

R. R. DYKSTRA, Chairman
C. U. DUCKWORTH
J. M. SUTTON
R. A. HENDERSHOTT
WALTER WISNICKY
F. L. SCHNEIDER
H. W. YOUNG

Biological Products

The Committee on Veterinary Biological Products recommends the elimination of "anaerobic antitoxin" from the list of biological products previously classified as acceptable by the Association. The product is produced by the toxins of Clostridium tetani, Clostridium welchii and Clostridium septicum. There is no record of production during the past eighteen months; and the nonspecific designation of the product is considered objectionable.

Circular letter 2495 (April 1, 1943), Bureau of Animal Industry, directed the indefinite discontinuance of production of "blackleg natural agresin" because it involves the destruction of calves. It is the opinion of the Committee that the production of "blackleg natural agressin" will be resumed again after the war, and it is retained on the present list to avoid prejudice.

It is the opinion of the Committee that Erysipelothrix rhusiopathias vaccine should be included in the list of acceptable biological products. This recommendation is made with emphasis on the following precautions in connection with its use:

 Erysipelothrix rhusiopathiae vaccine should only be used with a potent antiswine erysipelas serum.

2) This culture vaccine should be fully virulent.

3) Erysipelothrix rhusiopathiae vaccine should be administered only to swine on premises where the disease has been firmly established. The diagnosis should be based upon laboratory findings. The controlled experimental field studies of seroculture vaccination against swine erysipelas by the University of Nebraska and coöperating agencies have shown this procedure to be very valuable in areas where erysipelas repeatedly appears and makes successful swine husbandry impossible. The promiscuous use of the seroculture method may result in the introduction of erysipelas in nonendemic areas and thus may discredit a helpful procedure for disease control.

The following list of biological products includes those previously approved by the Association, together with the aforementioned changes.

Biological Products Classified as Acceptable

ANTITOXINS

Antivenin.

Botulinus antitoxin (type A, type B, type C, types A & B, types A, B, & C).

Tetanus antitoxin.

SERUMS

Antianthrax serum.
Antiblackleg serum.
Antibronchisepticus-bacillus serum.
Anticanine-distemper serum.
Antiencephalomyelitis serum (eastern).
Antiencephalomyelitis serum (western).
Antiencephalomyelitis serum (eastern and western).
Antifeline-distemper serum.

Antifeline-distemper serum.
Antihog-cholera serum.
Antistreptococcus serum.
Gonadin serum.
Normal serum.
Antiswine-erysipelas serum.
Antihomorrhagic-septicemia serum.

AGGRESSINS

Blackleg cultural aggressin. Blackleg natural aggressin.

DIAGNOSTICS

Avian tuberculin. Mallein. Tuberculin.

TOXOIDS

Staphylococcus aureus toxoid. Tetanus toxoid.

Vaccines and Viruses
Anthrax-spore vaccine.
Brucella abortus vaccine.
Canine-distemper vaccine.
Canine-distemper virus.
Encephalomyelitis vaccine (eastern).
Encephalomyelitis vaccine (western).
Encephalomyelitis vaccine (eastern and western).
Erysipelothrix rhusiopathiae vaccine.
Fowl-pox vaccine.
Pigeon-pox vaccine.
Hog-cholera virus.
Ovine-ecthyma vaccine,
Rables vaccine.
Fowl-laryngotracheitis vaccine,
Feline-distemper vaccine.

BACTERINS

Autogenous bacterin.
Blackleg bacterin.
Clostridium chauvei-septicum bacterin.
Clostridium hemolyticum bacterin.
Clostridium novyi bacterin.

s/H. E. BIESTER, Chairman
C. C. DOBSON H. W. PEIRCE
W. S. GOCHENOUR D. I. SKIDMORE

Proprietary Pharmaceuticals

(Preliminary Report)

The last two reports made by the Committee on Proprietary Pharmaceuticals give evidence of difficulties found in attempting to meet the requirements specified in the Administrative By-Laws of the American Veterinary Medical Association. This year the chairman of the Committee was requested to offer suggestions for its productive continuation.

Following a conference with the Board of Governors in Chicago in April, the chairman of the Committee on Proprietary Pharmaceuticals was requested to circulate a questionnaire, by way of trial, among a selected group of veterinary practitioners, and request their opinions regarding the actions, scope of usefulness, and possible complications or dangers in the use of one drug. If results seem to justify a continuation of this plan, it would be the beginning of a series of such questionnaires to be circulated by the Committee on Proprietary Pharmaceuticals for the purpose of collecting and recording this sort of information to the end that, in time, our profession might have a work on drugs and proprietary pharmaceuticals, based upon clinical observations.

It is realized that, at best, information of this character, based upon clinical evaluation, unsupported by verifying laboratory determinations, may be in part inaccurate and misleading, but that clinical observations made by capable practitioners of long experience will be sufficiently dependable to warrant the compilation of such information and opinion. A questionnaire on sulfanilamide has been circulated in accordance with the projected program.

s/J. V. Lacroix, Chairman
R. S. Amadon H. E. Moskey
A. N. Carroll R. L. Mundhenk
J. G. Hardenbergh

(Supplemental Report)

A questionnaire was mailed to 500 veterinarians throughout the United States on July 26, 1944. Secretary Hardenbergh and the chairman of this committee took the liberty to modify the form of the questionnaire so that replies were solicited on sulfanliamide and also on sulfathiazole. By August 15, 1944, 185 recipients of the questionnaire had made returns. Among these, returns from 77 persons were discarded because there was failure to specify the drug or species of animal, or the nature of the reply was such as to require time-consuming effort to make proper use of the return. Replies from five persons were discarded because they represented miscellaneous species of animals treated. Thus our report is based upon returns from 103 veterinarians.

On sulfanilamide, 86 veterinarians reported on its use in horses and cattle; 80 of this number found the drug useful, 3 were noncommittal, and 3 found it useful to a limited degree. Not one considered it of no use.

Thirty-four veterinarians made returns on the use of sulfanilamide in the treatment of dogs and cats. Thirty-two of this number found the drug useful; one stated that it was not useful, and one was noncommittal.

On sulfathiazole, 34 veterinarians made returns on the use of this drug in horses and cattle. Thirtyfour of this number found it a useful drug. Fortythree veterinarians made returns on the use of sulfathiazole in dogs and cats; 40 of whom found the

fathiazole in dogs and cats; 40 of whom found the drug useful, while 3 were noncommittal. For want of time, we could not summarize the opinions offered regarding indications, contraindications, dosage, and ill effects from the use of these two drugs. But a sufficient number of capable practitioners have given their views on these subjects to justify summarization of their views and recording the same. We recommend that this be done.

ing the same. We recommend that this be done.
For 39 years the American Medical Association
has issued a work, "New and Nonofficial Remedies,"
which informs physicians regarding the value of
therapeutic agents that are new. The American
Veterinary Medical Association has no council on

pharmacy and chemistry, no clinical laboratory, and few of the facilities possessed by the A.M.A. for testing and evaluating new remedial agents. Until the A.V.M.A. acquires the necessary facilities to do better, it is our belief that we should continue to solicit the opinions of practitioners regarding all therapeutic agents that are comparatively new, summarize these opinions, and record them for all who will be interested.

The Committee on Proprietary Pharmaceuticals of the A.V.M.A. came into existence in 1927 as a special committee to perform functions that were impossible for the want of provisions for doing the work. For example, who could disprove the accuracy of therapeutic claims that were made without facilities (including funds) for doing the work? Later the prescribed functions of this committee were modified, but as outlined in the by-laws of the A.V.M.A. at present, this committee is required, among other things, "to study the merits of proprietary pharmacuetical preparations employed in the practice of veterinary medicine: . ." This year your committee was obliged to go beyond the limits of its authority to attempt a useful accomplishment.

The name of this committee "proprietary pharmaceuticals" is not suited to the most important task at hand. It is recommended, therefore, that it be changed to the "Committee on Therapeutic Agents and Appliances."

The work of this committee obviously should not be limited to the consideration of proprietary pharmaceuticals. It should always be composed of persons who are qualified to evaluate the merits of therapeutic agents and appliances and its membership should be suitably enlarged. It should at least represent authorities on equine, bovine, porcine, ovine, caprine, avian, and canine ailments, their treatment and control. Represented also should be authorities in the fields of chemistry, physics, pharmacy, nutrition, surgery, bacteriology, virology, and mycology. These latter representatives might well be consultants who would advise on subjects within their respective fields.

Our knowledge regarding indications for the use of therapeutics agents and appliances does not remain static. Revision of our views on that which constitutes rational therapy in numerous instances have changed. Revisions, however, do not always bring improvement. A capable committee on therapeutic agents and appliances can stimulate progress by discouraging that which is ill-advised or detrimental and by promoting new agents that are deemed efficacious.

The sources of information for the functioning of a committee such as is here proposed should be without restriction. The proper evaluation of opinions of reputable practitioners and published reports, including the results of the clinical application of remedial agents, should be given consideration as well as the interpretations of those who publish reports on controlled research.

We recommend that this committee be continued and that it be instructed to compile dependable information which is to be kept in such form that members of the A.V.M.A. can benefit from this file by making request for such information as it may contain.

B/J. V. LACROIX, Chairman

Public Relations

It is now quite generally recognized that much depends on good public relations. Nations, societies, corporations, and even individuals, all are seeking by various means to improve their contacts with the public. The American Veterinary Medical Association has long recognized the im-

portance of public relations and has sought to give the public a better understanding of the relationship of veterinary science and the veterinary profession to the economic and social welfare of the country as a whole. Much has been accomplished but more is yet to be done,

There has always been a close relationship between the services of the veterinary profession and the economic and social welfare of any civilized nation. In the present international emergency, veterinarians are performing a service vital to the successful prosecution of the war. Although not generally recognized, this has attracted the attention of certain agencies which have given us much favorable publicity, thus enhancing our public relations position. This report calls attention to some publicity activities of the past year and contains comments and suggestions received from various sources.

The public relations department of the American Veterinary Medical Association, with the coöperation of various members, has, during the year, prepared many press releases and radio scripts dealing with timely veterinary subjects. These were both informative and educational. The radio programs were furnished without cost to any constituent veterinary association wishing to use them. In all, 33 associations took advantage of the service.

The Committee desired to know to what extent these press releases and radio scripts were being used and if they were accomplishing the purposes for which they were intended. We also wished to know how this committee could better serve all members of the veterinary profession. Therefore, a questionnaire was prepared and mailed to the secretaries of the 48 state associations and one district veterinary society. It asked six questions: (1) Does your association or society have a committee on public relations? (2) If so, is it active and what has it accomplished? (3) Has your society or association made use of the radio and press releases prepared and furnished by the AVMA office? (4) What public relations activity has, in your opinion, been most effective in your state? (5) How can the Committee on Public Relations of the AVMA better serve you? (6) Is there, at present, a serious shortage of veterinarians in your state, and if so has it encouraged other agencies to engage in veterinary practice?

Replies were received from 31 state and the District of Columbia societies, or 65 per cent of the total. Although answers to the questions in most instances represent only individual or personal opinions, interesting and valuable data were obtained.

The District of Columbia society had no committee on public relations and carried on no public relations activity. Eighteen of the state societies had regularly appointed committees, but only 11 of these were active. Fifteen of the societies having committees and 8 having no such committees used the material prepared by the AVMA office. Nineteen secretaries expressed opinions as to the type of publicity which they thought was most effective. In 18 instances, the radio and press were thought to be most effective and, in a few instances, talks were thought to be most effective. Two societies were unable to use the radio programs because of lack of facilities. In one instance, radio time could not be obtained and in the other, the broadcasting stations in the state did not reach the livestock owners as well as stations outside of the state.

Nineteen secretaries made no suggestions as to how this committee could better serve the veterinary profession in their states. Eight suggested carrying on with the present program. One felt that suitable moving pictures depicting certain veterinary activities would add interest to talks presented before lay audiences. Another stated

that no public relations activity has been effective in his state. He suggested "revising the entire system. Adopt methods that are practical. Do not have committees composed entirely of institutional employees, publishers of journals, and city practitioners." However, he did not state what were the omissions of those who have attempted to carry on public relations work in his state. Another man was of the opinion that the Allied Laboratories' series, "What the Veterinary Profession Means to Mankind", is most helpful in building good public relations. He finds them useful when giving talks before lay audiences and suggests that possibly the AVMA public relations department could prepare sildes of this material and make them available to members for talks before lay audiences. It was suggested by another man that the AVMA office furnish material for talks.

The possibilities for publicity through the medium of national advertising of such companies as National Dairy Products, Swift and Co., Metropolitan Life Insurance Co., American Meat Institute, National Dairy Council, the Borden Company, and others was also suggested. In their advertisements, such companies often call attention to the various agencies that contribute to the public health and welfare. Also mentioned was the desirability of publishing, in popular magazines, articles of general interest describing contributions of the veterinary profession. One secretary states that his association prepared a book of advice to stock raisers which he felt did much to enhance public relations in his state. Another suggested that an effort be made to have veterinarians appointed to boards and committees which come in contact with the public and with problems which concern the public. Most of these suggestions, however, are not new; they merely express the things we have long been trying to do.

The Florida State Veterinary Medical Association makes an annual award of a \$25 War Bond (formerly a silver cup) to the winner of the showman-ship class among the 4H and F.F.A. contestants at the annual fat stock show and sale held at Ocala, Fla., in February of each year.

The "Modern Farmer" program of station WEAF, New York, in coöperation with the state veterinary medical associations of New York, Connecticut, Pennsylvania and New Jersey, conducted a novel contest which started on April 1 and closed May 15, 1944. This contest was an outgrowth of the state association broadcasts inaugurated in January of this year. It was open to all people living and working on farms in the northeastern states and required that a letter of not more than 300 words be written on the subject, "How We Keep Livestock and Poultry Healthy on Our Farm."

The purpose of the contest was to measure listener response to the "Animal Gossip" series of broadcasts which were a weekly feature beginning January 24, 1944, on the "Modern Farmer" program of WEAF in which the four associations, as noted before, participated. The contest was divided into junior (under 21) and senior (over 21) classes, the prizes for each division being: 1st, \$100; 2nd, \$75; 3rd, \$50; and 35 prizes of \$5 each, or a total of 76 prizes.

Ten of the 31 state veterinary societies returning our questionnaire stated that there was at present a shortage of veterinarians in their states but in only one instance was it felt that this tended to encourage other agencies to engage in veterinary practice. Six reported increased activity by these agencies.

The veterinary profession during the past year received much favorable publicity from advertisements prepared and paid for by certain commercial firms engaged in the manufacture and sale of biological and pharmaceutical products, instruments, and other veterinary supplies. We also received favorable publicity through the advertisements of certain companies which manufacture and sell animal feeds and mineral supplements and through editorials appearing in newspapers and farm journals. Some of the advertisements dealt more with veterinary public relations than with the selling of the manufacturers' products and were excellent public relations material. However, such copy usually reaches only small select groups which already are familiar with the services rendered by veterinarians. Nevertheless, we are grateful for anything which may tend to improve our public relations.

A large number of veterinarians are now with our armed forces, but few people know about the services they are rendering. Most people think there is no need for veterinarians in our mechanized army. They do not know that veterinarians inspect all foods used by the armed forces and, in some instances, actively assist in providing ample and safe sources of food. Veterinary officers also assist in rehabilitating agriculture in the invaded countries so that the native populations are adequately fed and clothed. Veterinarians are serving in various capacities with medical units and the sanitary service, but because of the efficiency of the service and its lack of glamour, it is receiving little public attention.

We cannot hope to reach the entire public through the press and over the radio but, by carefully selecting the material to be presented and by making it entertaining as well as educational, we can reach a much wider audience. The article on the development and use of the Stader splint, which appeared in the Reader's Digest and later was dramatized over the radio, reached a wide audience and did much to enhance our public relations with the nonanimal owning public. The book entitled "Pattern for Penelope" by Mary Wolfe Thompson, and an editorial appearing in the Baltimore Sun, Jan. 22, 1944, entitled "The Honorable History of Veterinary Medicine," likewise did much to give a better understanding of the purpose and work of the veterinary profession. The writer of the editorial appearing in "The Sun" apparently was prompted to write it through information gathered in an interview with Dr. Patricia O'Connor, veterinarian for the Barrett Park Zoo. It is hoped that other writers will be attracted by the work and contributions of the veterinary profession so that the public will be further enlightened on the relationship of veterinary medicine to the economic and social welfare of man.

Some undesirable publicity was also received during the past year but this was not extensive nor serious and had little or no ill effect on our public relations. It is recognized generally that certain radio broadcasts designed for entertainment tend, more or less, to follow the same pattern. In three instances, a veterinarian was used as the "stooge." The comments made about veterinarians were not only uncomplimentary but stupid and, in one instance, reflected on the veterinarian's honesty and integrity. The undersirable nature of this characterization was called to the attention of the program sponsors by the AVMA Board of Governors. They were assured that no disrespect was meant and that similar comments would not be forthcoming in the future. One company, Lever Brothers, who sponsor the "Amos and Andy" programs, paid tribute to the veterinary profession in a later broadcast in a very generous manner.

The Committee on Public Relations feels, however, that failure to give rightful recognition to the veterinary profession is more serious than any undesirable publicity received. Such omissions by those who have no direct relationships with the

veterinary profession can be readily understood, but, when an industry so vitally dependent on livestock production as represented by the American Meat Institute fails to recognize its importance, it is rather amazing. In the fall of 1943, a full page advertisement by the American Meat Institute appeared in the Saturday Evening Post and other national magazines. It was entitled "America's Meat Front. Meet the six key people who are working together to help our country in its wartime meat crisis." In this advertisement, the livestock producer, the farmer, the meat packer, the sausage maker, the meat man and the housewife were designated as the six "key people." This advertisement was undoubtedly prepared by some one who was interested only in "sales appeal" and had little or no knowledge of livestock production. He knew only that meat comes from animals and that animals are raised on farms. Anyone familiar with meat production surely should know that the veterinarian (who spends his entire time preventing the occurrence of animal diseases which, if not controlled, would decimate our herds and flocks), and the transportation systems (which make it possible for the farmer to deliver his livestock to the packing companies, and then transport the finished products from the packing house to consumer outlets) must be fully as important as the sausage maker. Yet neither of these were mentioned. The failure to mention the veterinarian was called to the attention of the American Meat Institute. We do not ask for special favors, but we do think that such organizations should be cognizant of the close relationship of veterinary medicine to the success of their industry.

In this report, we have mentioned various comments and suggestions received and have commented on some of the publicity given the veteriary profession. We can not claim credit for any striking or new developments which would enhance the public relations of our profession; neither are we going to suggest a lot of work for next year's committee to do. We would, however, like to close with the following comments and suggestions:

Publicity and public relations are not synonymous, but they are closely related and the one can either enhance or cheapen the other. The upbuilding of good public relations cannot be relegated to committees or groups as they can only plan and guide group activity. The quality of our public relations depends largely on the acts of each veterinarian. It is most important that every veterinarian recognize this, because the failure of a single member of our profession to do his part may well react against all of us. To illustrate this, we quote from an editorial which appeared in the "St. Paul Dispatch" of March 5, 1944. In this editorial, Averell Broughton, public relations counsel for the National Association of Insurance Agents, citing the telephone business as an example, is quoted as saying that "no matter how much favorable publicity the president of the American Telephone and Telegraph Company might secure, folks would still resent any flippancy from the office girl in the local exchange, a grumpy repair man or any inefficiency in the service." The editor then goes on to say that "the same holds true of every private or public enterprise. Milk drivers, retail clerks, deliverymen, waitresses, traffic police, the personnel of municipal, state and federal offices, day laborers and journeymen; each in his turn is responsible in some measure for the public relations existing between his employer and the public in general. The war impact has made many people arrogant, indifferent to the little niceties, and unmindful of the fact that the day may come when there will be vast disturbances within the human economy. The time may come when the 'take it or leave it' attitude may have to make way for another order, when employes can no longer trade on manpower shortage, when competi-

tion will again be a factor in commercial relations and everyone will be on their own resources. In this event, public relations will be determined, not by publicity agents but by the acts of individuals directly engaged in building public relations.

The Committee on Public Relations has always tried to do everything possible to promote better public relations. During the past year, the Committee has tried to interest some writer to prepare a popular story on veterinary medicine. It is our aim to have one or more such articles published in national magazines so that they may be read by persons in all walks of life. We hope this will be possible in the not too distant future. Such articles would no doubt enhance our public relations and also challenge us to continue to do our best at all times.

It is the hope of this committee that everyone will do his part. Coöperate with one another, be charitable and considerate, give good service at all times, and never be so busy that you cannot take an active part in civic and public affairs. The public is slowly learning that veterinarians have a broad knowledge equalled by no other group or profession; veterinarians are frequently asked to give talks before various groups or to serve on committees or boards. Every time one of us performs such a service, he is helping to promote better public relations for our profession. We should all adopt as our slogan the following statement which is credited to Abraham Lincoln: "With public sentiment in its favor, nothing can fail; without it, nothing can succeed."

s/C. F. SCHLOTTHAUER, Chairman

CLIFTON D. LOWE CASSIUS WAY E. C. SCHUBEL MARK WELSH

Poultry

The Poultry Disease Committee for 1944 has continued to direct its activities toward reducing mortality by improving disease control, breeding, feeding, and management. This was the theme of the committee report for 1942. Dr. Cliff D. Carpenter has summarized the activities of the National Poultry Advisory Council for this year:

Poultry Advisory Council for this year:

"In January, 1944, the collaborative project of the National Poultry Advisory Council and the U. S. Department of Agriculture was transferred to the new Feed and Livestock Branch, Office of Production, War Food Administration. The program has been enlarged and continues under the direction of Cliff D. Carpenter, now special assistant to the chief of the Branch, Walter C. Berger. Dr. Carpenter continues his office in Chicago, which is now at \$11 Mallers Building, 5 S. Wabash Ave., and the Council has established an office in Fort Wayne, Ind.

"The Executive Committee was reëlected with the following changes: Mr. Charles L. Davidson, Lithonia, Ga., succeeds Dr. Charles B. Cain, deceased, and Mr. W. Ray Ewing, South Pasadena, Calif., succeeds Mr. Alex Johnson, resigned. Miss Jane Wasmuth, Dr. Carpenter's assistant, was elected assistant executive secretary.

ADULT MORTALITY REDUCED 3 PER CENT

"For the first time in more than a decade, the rate of adult mortality in the nation's poultry flocks was turned back from 19.6 to 16.2; this is in the face of the most serious obstacles ever encountered by the industry, including dislocated transportation, labor shortages, and feed supply difficulties.

"It is obvious that the Council's program played a significant part in this reduction. Thus we have concrete evidence of the value of all agencies uniting in a common program, and furthering its acceptance by the poultry grower.

"Since June 1, 1943, nearly 3,000,000 booklets of the three programs,* and over 10,000 posters have been distributed by state colleges, veterinarians, hatcherymen, feed and equipment manufacturers, and other public and private agencies.

"Monthly releases are issued by the secretary to 165 farm and trade papers, 210 radio stations, 115 poultry leaders, veterinary journals, and house organs, extension editors and extension directors."

PROGRESS OF POULTRY IMPROVEMENT PLAN

The progress of the National Poultry Improvement Plan has been summarized by Senior Poultry Coördinator Paul B. Zumbro:

"A significant development in the work of the National Poultry Improvement Plan is the requirement which became effective Sept. 1, 1943, that participation in one of the pullorum-control and eradication classes of the plan shall be a prerequisite to participation in any of the breeding stages of the plan. Previously, a flock or hatchery in some of the states could qualify for a breeding stage such as U. S. Approved or U. S. Certified, without being officially tested for pullorum disease. The new requirement is a recognition of the importance of official pullorum testing.

"Each year, an increasing number of the official state agencies have required the flocks to be officially tested before they could qualify for a breeding stage. The number of states having this requirement for each of the past six years is as follows:

1937-38, 20; 1938-39, 23; 1939-40, 27; 1940-41, 30; 1941-42, 33; 1942-43, 39.

"During 1935-36, the first year of the plan, only 58.2 per cent of the birds were officially tested. This percentage has increased every year. During 1942-43, 96.2 per cent of the birds were so tested and during the current year, because of the new requirement, 100 per cent of the birds are officially tested for pullorum disease.

"The adoption of the U. S. Pullorum-Controlled class at the 1941 National Poultry Improvement Plan conference should have a far reaching effect on the control of pullorum disease. To qualify for this class, the flocks must have fewer than 2 per cent of reactors on the last test. This class encourages retesting to a low tolerance level. During the first year that this new class was available, 1941-42, 21 per cent of the birds in hatchery supply flocks qualified. During the 1942-43 hatchery season, 35 per cent of the birds qualified for this class, and the preliminary reports indicate that the percentage will be further increased for the 1943-44 season.

"The maximum tolerance for the U. S. Pullorum-Tested class is being reduced at the rate of 1 per cent a year, as recommended by the Poultry Committee of the American Veterinary Medical Association several years ago. The maximum tolerance for 1943-44 is less than 7 per cent. Unless the plan is changed, the maximum tolerance will be less than 5 per cent in 1945-46 and the following years.

"The National Poultry Improvement Plan office of the Bureau of Animal Industry has been compiling some very interesting data on the number of birds officially tested and the number and percentage of reactors on the first test. These data for the past ten years are as follows:

*Poultry Disease Committee Rpt., J.A.V.M.A. 103, (1943): 327-328.

YEAR	Number Chickens Tested, First Test		PERCENT- AGE OF REACTORS
1933-34.	2,640,366	99,540	3.77
1934-35.		111.858	3.72
1935-36.	4,322,800	158,511	3.67
1936-37.	6,022,966	200,496	3.33
1937-38.		170,077	3.23
1938-39.	8,741,706	283,025	3.24
1939-40.	11,105,307	343,861	3.10
1940-41.	12,214,011	350,887	2.87
1941-42.	16,959,214	447,679	2.64
	18,457,818	442,459	2.40

"The number of birds officially tested has increased greatly each year, and at the same time there has been a gradual decrease in the percentage of reactors found on first tests.

"Chick livability surveys conducted in a number of the states have demonstrated the importance of testing more than once a year, and several large hatchery operators are now following the practice of retesting all flocks before any eggs are saved for hatching purposes. The pullorum-control program, which includes flocks and hatchery sanitation as well as testing, has greatly reduced brooding losses."

PROGRESS OF REGIONAL POULTRY RESEARCH

A progress report from the U. S. Regional Poultry Research Laboratory was kindly furnished by Director Berley Winton:

"Reports issued during the year at the U. S. Regional Poultry Research Laboratory suggest that lymphomatosis in chickens is transmitted through the egg. The evidence supporting the hypothesis of egg transmission is provided by (1) the occurrence of a high incidence of the disease among the chickens introduced originally through hatching eggs and in subsequent generations when raised in an environment not previously occupied by poultry and under a rigid quarantine that has prevented the occurrence of all other diseases and parasites other than coccidia, and by (2) the prevalence of a high mortality at an early age of progeny from certain hens when raised in an environment of strict isolation, when the progeny of other hens raised under similar conditions have remained free of lymphomatosis to at least 600 days of age.

"The transmission of lymphomatosis by contact was also demonstrated during the year. A group of 91 White Leghorn chickens was raised in isolation and under quarantine to an average age of 300 days without the development of a single case of the disease, but by the time their 51 sisters, which were raised in another house with other chickens, were of the same age a total of 28 per cent of them had succumbed from lymphomatosis.

"Studies in progress relating to the viability of a transmissible fowl tumor (Olson) indicate that there is no significant reduction or alteration in its capacity to produce typical tumors in the pectoral muscle after being slowly frozen and stored at —65°C. to —76°C for 10 to 391 days.

"A high incidence of local tumors was produced in 312 White Leghorn chickens when a transmissible fowl tumor (Olson) was implanted intramuscularly, subcutaneously, intradermally, or by dermic scarification. All birds surviving inoculation showed a regression of the tumor and immunity to subsequent implantation of the same tumor strain. The immunity obtained is of particular interest because it appears in all birds which have survived active tumefaction, it cannot be overwhelmed by very large or repeated doses of the same agent, and it is present over a prolonged experimental period."

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TURKEY IMPROVEMENT PROGRAM

Notable progress was made late last year when the Turkey Improvement Program of the National Poultry Improvement Plan was formulated. Ex-cerpts from this program indicate its development and objectives:

"In 1937 a tentative turkey improvement plan was developed by a National Turkey Improvement Committee. That plan was intended as a guide for state turkey improvement work until such time as there was sufficient demand to justify the inclusion of a turkey improvement program in the

clusion of a turkey improvement program in the National Poultry Improvement Plan.
"In 1941, the National Turkey Federation appointed a special committee to study state programs and to develop a turkey improvement plan that could be applied throughout the country. The plan developed by the committee was presented at the 1943 annual meeting of the Federation and unanimously adopted by the general session.

"The turkey improvement program became operative Sept. 25, 1943, with the approval of the Secretary of Agriculture and under authority of an appropriation made by Congress (Public Law 129—78th Congress, Chapter 215—1st Session H.R. 2481) for the Bureau of Animal Industry, U. S. Department of Agriculture, to be used in coöperation with state authorities in the administration of regulations for the improvement of poultry, poultry products. the improvement of poultry, poultry products, for and hatcheries.

"Acceptance of the turkey program will be optional with states and individual members of the industry within states. It will be administered in each state by an official state agency coöperating with the Bureau of Animal Industry, U. S. Department of Agriculture. ment of Agriculture.

"The primary objectives of this project are to improve the production and market quality of turkeys and to reduce losses from pullorum disease. Through it turkey breeding stock, hatching eggs, and poults may be identified, authoritatively, with respect to breeding quality and degree of freedom from pullorum disease. The application of the provisions of the program should cause turkey production to be more efficient and thus aid in real-ingring. duction to be more efficient and thus aid in making the enterprise more profitable."

PERTINENT EVENTS OF THE YEAR

Some increase in deficiency diseases has been noted, chiefly as a result of the lack of vitamin A, D, and riboflavin. In the East, an increase in encephalomalacia was attributed to increased amounts of low grade oils used in the feed.

Experiments at the Wisconsin station indicate that chickens having access to feed at all times were more resistant to cecal coccidiosis than those that had been fed at intervals.

The Michigan station reports good results in treating cecal coccidiosis with sulfamethazine when the birds were confined in batteries,

Blackhead, trichomoniasis and hexamitasis are still common infections among turkeys.

Research work in California demonstrated the findings of Hexamita sp. in the ring-necked pheasant and its transmission to turkeys.

Pullorum disease and paratyphoid infections are important problems among turkey poults. Research work at the California station indicates that sulfaguanidine and sulfathiazole are ineffective thera-peutic agents for treatment of acute pullorum disease in turkeys, Salmonella newington was isolated from turkeys in California last year.

Pullorum disease still ranks as the important disease of chicks. This condition presents a challenge to the veterinary profession. The cycle of infection is known, methods of control have been worked out, but still the disease is rampant. A notable increase in acute bacteremic pullorum disease of adult chickens has been noted in Michigan, together with some cases of fowl typhoid. Fowl typhoid

was also diagnosed in 6-week-old turkey poults. In the eastern section of the United States, fowl typhoid is on the increase while in the Kansas area a decrease has been noted.

Fowl cholera has decreased in Kansas during the last year. California workers report pasteurellosis in California Valley quail. The Michigan station reported the appearance of fowl cholera in chickens and ducks. These were the first cases of this disease since 1937. The Texas station reported the finding of a Pasteurella-like organism in sinusitis of turkeys.

Fowl pox, laryngotracheitis, and infectious bronchitis continue to be prevalent throughout the United States.

Pullet disease seems to be on the increase and veterinarians are warned not to confuse this condi-tion with avian pasteurellosis and other bacteremic diseases.

Avian pneumoencephalitis remains a potential hazard to the poultry industry. According to circular letter No. 2652, issued June 3, 1944, by the Chief of the Bureau of Animal Industry, Newcastle disease and pneumoencephalitis are immunologically

Mycotic pneumonia in turkey poults and generalized mycosis of adult chickens and turkeys has apparently increased in Michigan during the last

RECOMMENDATIONS

- It is urged that a paper or discussion on poultry or poultry diseases be on every veterinary program, whether local, state or national.
- Every educator in the field of poultry should use the facilities of visual education in presenting poultry problems to students, veterinarians, and research workers.
- Our veterinary colleges should adopt more uniform and extensive instruction in poultry path-ology, management, and breeding.
- 4) The veterinarian should seek to acquaint him-self with the problems of poultry husbandry in order to more adequately serve that industry.
- 5) Extension schools for studying poultry diseases should be more widely available and more veterinarians should attend.
 6) Research workers and veterinarians should be on the lookout for fowl plague and Newcastle
- disease.
- 7) Research workers, diagnosticians, and veterinarians should be on the alert for outbreaks of pneumoencephalitis.
- There should be a poultry pathologist on the staff of the National Poultry Improvement Council.
- Practitioners should be encouraged to con-tribute articles on poultry diseases to the industry and veterinary journals.*

s/FRANK THORP, JR., Chairman F. R. BEAUDETTE T. M. DEVRIES P. V. NEUZIL J. W. LUMB

- *The original report submitted by the Committee contained two additional recommendations, which were deleted by the House of Representatives on recommendation by the Executive Board. They were as follows:
- 10) In the future it is suggested that a coördination of all poultry meetings be effected. In this way the AVMA will have definite knowledge of such activities and to what extent they are to be supported.
- 11) The Executive Board of the AVMA should take up the matter of issuing reports on pertinent poultry information to the poultry pathologists throughout the United States and its territories.

Nutrition

The shortage of many of the important ingredients used in the production of animal feeds has become increasingly acute, involving not only proteins and vitamin-rich foods but carbohydrates as well. These conditions have necessitated some revisions in our former concepts of animal nutrition. New and revised feeding practices have been, and are being, inaugurated with surprisingly good results. The research staffs of the experiment stations, those maintained by manufacturers of animal feeds, and the animal owners are all doing an excellent job of working together to produce a maximum number of animals with a minimum amount of feed. At present, however, animal industry is facing an over-all shortage of pounds of feed per animal. This must lead either to liquidation of some of the livestock or to the underfeeding of many animals.

Faced with this situation, it is of greatest importance that veterinarians do everything possible to develop a sound working knowledge of animal nutrition and familiarize themselves with the diseases which may result from faulty nutrition.

During the past year, this committee has furnished copy for the Nutrition Section of the J.A.V. M.A. An effort has been made to present material in this section which will assist veterinarians to more effectively cope with nutrition problems in practice and more intelligently handle the problems arising from the wartime shortage of feedstuffs.

There is still under consideration the preparation of a series of articles which will cover in an orderly manner fundamentals of animal nutrition and the relationship between nutrition and disease which every veterinarian should know. In the January, 1944, issue of the JOURNAL the Committee collaborated in the preparation of information regarding vitamin A. This was prepared to serve as a model to be followed in the preparation of work to follow.

The Committee on Nutrition met in Chicago on May 17, 1944, with representatives of the Committee on Nutrition of the American Feed Manufacturers Association. Certain problems of direct concern to both committees and ways in which they may cooperate were discussed.

In order that the work may be carried on in a more efficient manner, the following recommendations are offered:

- 1) That each state veterinary society appoint a committee on nutrition, this committee to coöperate with the program committee in arranging for a discussion of some phase of nutrition by a competent authority. To assist with this work, the AVMA committee is planning to make available to each state society a list of suggested topics which could serve as a guide in planning programs.
- 2) That the faculties of the colleges of veterinary medicine do everything possible to give undergraduate a solid foundation in the subject of animal nutrition and a knowledge of the relationship of nutrition to disease.
- 3) That research workers in biochemistry and veterinary medicine collaborate to the fullest extent possible in all experimental projects relating to animal nutrition or veterinary medicine. Where the project is instituted in animal husbandry a veterinarian should be a participant; if the project is instituted in veterinary pathology, a blochemist should be a collaborator.

s/H. J. METZGER, Chairman

CLIFF D. CARPENTER GEORGE H. HART C. C. HASTING M. L. MORRIS

Registry of Veterinary Pathology Army Institute of Pathology

Recognizing the great importance of pathology in furthering a more complete understanding than now exists of the processes of disease, the Executive Committee of the American Veterinary Medical Association recently proposed ar amendment to Article XII of the Constitution. This amendment implements an arrangement previously approved by the Surgeon General of the United States Army and the Board of Governors of the American Veterinary Medical Association for the establishment and maintenance, at the Army Institute of Pathology of the Army Medical Museum in Washington, D. C., of a Registry of Veterinary Pathology.

. C., of a Registry of Veterinary Pathology. The purpose of the registry will be to provide, central institution, examples of normal and morbid material suitable for teaching and research. The material will be available to the graduate student, the specialist, the experimentalist, and other authorized persons. In addition, a consultation service for pathologic diagnosis will be maintained, especially for practicing veterinarians who do not access to diagnostic facilities. This feature, we hope, will be publicized sufficiently to acquaint every veterinary practitioner with its availability and usefulness. The benefits of such consultation service will be twofold: First, the practitioner will receive, without cost, an accurate diagnosis of the material submitted and thus will be in possession of precise and important information should contribute to the intelligence and efficiency of the service he renders his clientele. Second of the service he renders his chemicle. Second, should a reasonably active consultation service be developed, a wealth of interesting and important material would be added to the registry, where it would be available for use by others.

An important feature of the registry, as planned, will be sets of stained slides representing the normal histology of as many different species of animals as possible. The desirability of having available such material in the form of loan sets will be appreciated by experimentalists who use in vivo procedures. There also will be assembled material representing general pathologic anatomic changes, including those attributable to vitamin deficiencies and to general and specific diseases of the different organs and tissues. Moreover, examples of natural and experimentally induced neoplasms will be collected. To be included, also, will be tissues containing characteristic lesions of experimentally induced infectious diseases in various species.

The committee appointed by President Bower to arrange for the development of the Registry of Veterinary Pathology met on July 12, 1944, at the Army Institute of Pathology in Washington, D. C. The following matters were considered and acted upon:

1) A public announcement pertaining to the establishment of the registry, for publication in the "Journal of the American Veterinary Medical Association" was prepared (this appeared in the issue of August, 1944). Copies of the announcement were directed to the editors of various other professional and technical journals in the United States, Canada, and the British Isles, with the request that the announcement be published in an early issue.

 Forms for recording accessions from contributors, including instructions for the proper preparation and shipping of material, were prepared.

3) Consideration was given to the question of nomenclature and classification of disease entities. It was agreed that since the Registry of Veterinary Pathology is to be an integral part of the Army Institute of Pathology of the Army Medical

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Museum, it would be desirable to utilize for the Registry of Veterinary Pathology the same classification as that followed for the parent collection. This will expedite filing and will provide for the ready accessibility of material as needed.

4) Sources for obtaining special material for the registry were discussed. It was the opinion of the committee that the many excellent research laboratories in this country constitute sources of almost limitless amounts of material, much of which probably could be made available if arrangements with the proper persons were effected. This ments with the proper persons were effected. is to be done. Another, and an almost inexhaustible source of excellent material is the Meat Inspecble source of excellent material is the Meat Inspec-tion Division of the Food Distribution Administra-tion of the United States Department of Agricul-ture. The proper authorities who control the dis-posal of morbid tissue encountered in the routine inspection of meats by federal veterinarians were interviewed and assurances of complete cooperation were obtained. In addition, the committee has been assured of gifts of very valuable material from institutional and private collections which will constitute a substantial nucleus for future developments.

developments.

5) The question of funds for development and maintenance of the registry was considered. This venture, as is true of most other desirable institutional activities, will require funds for maintenance and growth. It should be clearly understood that the major portion of the financial responsibility for maintenance of the registry will be borne by the Army Institute of Pathology of the Army Medical Museum. However, since the Registry of Veterinary Pathology is sponsored by, and identified with, the American Veterinary Medical Association, it is important that the Association provide, annually, a reasonable sum of money to assist in the support of the enterprise. After a assist in the support of the enterprise. After a

conference with Col. J. E. Ash, director of the Army Institute of Pathology of the Army Medical Museum, it was agreed that the Association would appropriate \$500 for the balance of the year 1944, and that, for 1945, the Association would appro-priate \$1,000 for the support of the registry. The special committee recommends that the sums named

be made available for the purpose mentioned.

The special committee is sure that the Associa-The special committee is sure that the Association, in authorizing the establishment of a Registry of Veterinary Pathology, has initiated a venture of tremendous importance, the full significance of which may not become evident until five to ten years have elapsed. Not only is establishment of the registry a splendid achievement for the American Veterinary Medical Association but it will the registry a splendid achievement for the American Veterinary Medical Association but it will, we are sure, be a noteworthy contribution of veterinary medicine to medical science. Registries in special fields of pathology have been established previously at the Army Institute of Pathology by a considerable number of professional societies and a considerable number of professional societies and it is a source of much satisfaction and pride that veterinary medicine is also to be represented in what is truly a remarkable institution dedicated to diagnosis and review of pathologic material, instruction, and research. It is the fervent hope of the special committee that those interested will make full use of the collection, as contemplated, and that practitioners, experimentalists, laboratorians and graduate students will concernts with torians, and graduate students will cooperate with the committee and with the Army Institute of Pathology in the development and maintenance of what should eventually become an enterprise of great importance in the teaching and investigation of diseases of animals and human beings.

s/WM. H. FELDMAN, Chairman

HARRY W. SCHOENING CHARLES L. DAVIS

BALDUIN LUCKE

Special Committees

Vital Statistics

In October, 1943, President Bower appointed a Special Committee on Vital Statistics. The personnel of this committee includes general practitioners of veterinary medicine, a veterinarian of the federal Bureau of Animal Industry, a veterinarian at a large public stockyards, a state livestock sanitary official, a veterinarian engaged in research, and a representative of the biological industry.

The purpose of this committee as outlined by President Bower is: "To study, formulate, and place into operation a workable system of collecting and compiling vital statistics on animal dis-

A preliminary meeting of the Committee was held during the U. S. Live Stock Sanitary Association meeting in Chicago in December, 1943. Groundwork for future activity was discussed.

A special meeting of the Committee, with President Bower and Dr. E. F. Sanders, Kansas City, serving as authorized proxies for the absentee members, was held in Kansas City on April 15, 1944. The Committee desires to report the results of its activities, and to present a survey of the problem assigned, as follows.

AUTHENTIC DATA LACKING

During the past half century or more, both fed-eral and state governments have spent millions of

dollars on animal-disease control. Yet, with the possible exception of bovine tuberculosis and brucellosis, we have little or no authentic information on the nationwide incidence of animal contagions, their total morbidity and mortality, geographical distribution, and many other vitally important facts. We have directed funds and vast expenditures of professional energy in disease control without knowing the full extent or the total ravages of

This in no way belittles the fact that a great mass of valuable information has been accumu-lated, both by the various states and by the federal government on many diseases of both animals and fowls. But, the fact remains that we do not have, in this most advanced of all livestock nations, authentic, tabulated, and statistically correct data on the nationwide incidence of animal contagions, to say nothing of the less spectacular, though often more costly, infectious and nor nfectious diseases.

QUESTIONNAIRE

A questionnaire was directed by the Committee to the livestock sanitary official of each state and territory of the United States. The following ques-

tions were asked:

1) In your state, is the reporting of contagious animal diseases on a mandatory or voluntary ba-

2) Is the reporting of animal diseases covered by law or departmental regulation?

3) If mandatory or voluntary, what contagions

are to be reported?

4) Are any penalties established covering failure report reportable contagions?

5) Can you offer any suggestions for getting better cooperation from practicing veterinarians in filing prompt and authentic reports relative to reportable diseases?

Our committee wishes to thank the livestock sanitary officials of 42 states and territories for their splendid cooperation and prompt replies to the questionnaire. Their suggestions are invaluable and sincerely appreciated.

PRESENT STATUS

In 32 of the reporting states, the reporting of animal contagions is mandatory. In 29 states, such reports are mandatory under law. In 4 states, contagious disease reports are mandatory under departmental regulation. In 3 states, contagions are reportable under both state law and departmental regulation. Four states have no laws, regulations, nor penalties relative to reporting animal contagions.

Twenty of the 42 reporting states and territories have established penalties for failure to report animal contagions. These range from a minimum \$5 fine to a \$500 fine or one year in jail, or both. The penalty in one state is revocation of the license to practice veterinary medicine. In most states, penalties are either not enforced at all or only upon grave infractions of the law.

DIFFICULTIES

Some difficulties facing the development of nationwide vital statistics on animal diseases are:

- 1) Great land areas of the United States are without the services of graduate veterinarians. For example, there are more than 20 counties in both Missouri and South Carolina without a grad-uate veterinarian. There is one graduate practitioner in the Territory of Alaska.
- 2) In several states, either laws or regulations with the enforcement status of laws must be developed before statewide disease reports are ob-
- 3) A planned and nationwide educational program on the economic advantages of animal disease data directed not only to veterinarians and veterinary students, but to the entire livestock industry, appears necessary.
- 4) Full cooperation of all state livestock sanitary officials is a prerequisite.
- 5) Correlation of all present sources of information on animal contagions at a central source is needed; for example, reports from abattoirs, diag-nostic laboratories, rendering plants, field control personnel, etc.

SUMMARY

Your committee's study of the entire problem can be summarized in the following conclusions and recommendations:

1) The greatest single difficulty facing compila-

tion of animal-disease data is the failure of practicing veterinarians to file reports. Self-addressed return cards, etc. in no way solve the problem.

- 2) Even though reporting of animal contagions is mandatory by law in many states and failure to comply is subject to fine or imprisonment, enforcement is either lax, negligible, or disregarded.
- Livestock sanitary officials should report ani-mal-disease data back to practitioners at regular intervals if they are to expect cooperation from practitioners in filing reports.
- 4) A long time educational program, directed not only to veterinarians, but also to the livestock industry at large, seems a prerequisite before continued compilation of animal-disease data on a national basis is established and perfected.
- 5) Vital statistics on animal diseases appear to be just as much a public responsibility and as conducive to comparable progressive national economics and welfare as does the compilation of statistical data on human diseases.
- 6) In that development and establishment of a working organization is, in all probability, beyond the scope of a volunteer committee or, in fact, beyond the facilities of the present AVMA office and personnel and, further, in that the entire problem is one unquestionably related to sound agricultural economics, it appears advisable that the AVMA should formally petition the Secretary of Agriculture to establish within the federal Bureau of Animal Industry, a "Division of Vital Statistics on Animal and Poultry Diseases."
- 7) The soundness of this suggestion is further augmented by the fact that a trained veterinary and statistical personnel is already established by the federal Bureau of Animal Industry and the United States Department of Agriculture in every state and territory in close liaison with state livestock sanitary officials.
- It is the committee's sincere belief that establishment of a Division of Vital Statistics within the federal Bureau of Animal Industry would pay immeasurable dividends to the people of the United States.

It would also enable our state and federal governments, as well as the veterinary profession, to put into operation, more sensibly and effectively, animal-disease-control measures where most needed.

Lastly. information from such a division on vital statistics would serve as an invaluable guide to animal-disease research and aid greatly in the protection of public health.

Attached to this report are tabulations on the present status of animal-disease reports in 42 states and territories. There is also attached a list of suggested reportable diseases and abridged suggestions from state livestock sanitary officials.

It is recommended that the AVMA continue its Committee on Vital Statistics in the further de-velopment of the project, and in an advisory ca-pacity to any appointed federal agency.

s/A. H. Quin, Jr., Chairman

A. N. CARROLL

C. C. FRANKS

A. B. CRAWFORD

ROBERT GRAHAM

H. F. DOTSON

L. M. HURT

(See following page for vital statistics tabulations)

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Present Status of Animal-Disease Reports

	Present Status	of Animal-Disease F	(eports
STATE OR	MANDATORY OR	BY-LAW OR	ARE PENALTIES FOR NOT REPORTING
TERRITORY	VOLUNTARY	REGULATION	ESTABLISHED?
Alabama	Voluntary	Both	No
Alaska	None	None	None
Arizona	No law	None	None
Arkansas			
California	Mandatory	Law	Misdemeanor
Colorado	Mandatory	Law	None
Connecticut	Mandatory on Select- men only	Law (Indirect)	No Penalties
Delaware	Mandatory	Regulation	No Penalties
District of Columbia			
Florida	Mandatory	Law	No Direct Penalty
Georgia	Mandatory	Regulation	No Direct Penalty
Idaho	Mandatory	Law	Penalties Established
Illinois	Mandatory	Law	\$500 Fine or 1 year jail
Indiana	Mandatory	Law	Misdemeanor
Iowa	Voluntary	None	None
Kansas	Mandatory	Law	No Direct Penalties
Kentucky	Mandatory	Law	Misdemeanor, \$50 to \$200 fin or jail sentence No Penalties
Louisiana	Voluntary	Regulation	No Penaities
Maine			201.1
Maryland	Mandatory	Law	Misdemeanor and \$50 fine
Massachusetts	Mandatory	Law	Fine of \$100
Michigan	Semi-Mandatory	Law	No Direct Penalties
Minnesota	Mandatory	Law	Misdemeanor
Mississippi	Voluntary	Regulation	No Penalties
Missouri	Voluntary	Neither	No Penalties
Montana	Mandatory	Law and Regulation	Misdemeanor
Nebraska	Voluntary except spe- cified under quaran- tine	Regulation	No Penalty
Nevada	Mandatory	Law	No Penalties
New Hampshire	Mandatory	Law	General Penalty
New Jersey	Mandatory	Law	Misdemeanor
New Mexico			
New York	Mandatory	Law	No Penalties
North Carolina	Mandatory	Law	Misdemeanor-Fine or Jail
North Dakota	Mandatory	Law and	Misdemeanor
North Danoth	Manuatory	Regulation	atisuemeanor
Ohio	Mandatory	Law	Revocation of License
Oklahoma	Mandatory	Law	Established but not enforced
Oregon	Mandatory	Law	Misdemeanor, Fine \$50 to \$25
Pennsylvania	Mandatory	Law	Misdemeanor. \$100 fine
Rhode Island	and the same of th	ALMA III	and deliverion (Vacco and
South Carolina	** ** **********		
South Dakota	Mandatory	Law	No Penalties
	Mandatory	LALW	AND I CHARLES
l'ennessee	None	Nama	Vone
l'exas	None	None	None
Utah	Voluntary	Regulation	No Direct Penalties
Vermont	Mandatory	Law	Fine \$25 to \$200 or 6 months in jail
'irginia	Mandatory	Regulation	No Penalties
Washington	Mandatory	Law	None
West Virginia	Mandatory	Law	\$100 fine—Misdemeanor
Wisconsin	Mandatory	Law	Fine \$5 to \$25—10 to 60 days in jail
Wyoming	Mandatory	Law	\$50 to \$500 Fine

Suggested List of Reportable Diseases

Horses	CATTLE	SHEEP	SWINE	FowL	Dogs
Anthrax Glanders Rabies Dourine Encephalomyelitis Swamp Fever Vesicular Stomatitis Equine Influenza Distemper Coital Exanthema Mange Hemorrhagic Septicemia Strangles	Tuberculosis Brucellosis Listerellosis	Anthrax Rables Anaplasmosis Scables Contagious Ecthyma Listerellosis Black Disease	Anthrax Rabies Hog Cholera Erysipelas Swine Pox Tuberculosis Swine Flu Swine Dysentery Swine Plague Vesicular Exanthema Vesicular Stomatitis Foot-and-Mouth Disease Brucellosis	Pox Psittacosis Laryngotrache- itis Fowl Pest Fowl Cholera Trichomoniasis Tuberculosis Pullorum Disease Pneumo- encephalitis	Rabies Leptospirosia
2	Rinderpest Mad Itch Hemorrhagic Septicemia Pink Eye** Piroplasmosis Malignant Catarrhal Fever Mastitis (Acute)**				

All contagious diseases and blood parasitisms of foreign origin not indigenous to the United States.

*Reported through testing report.

**-Ordinarily single premise troubles.

Parasitology

In its last annual report (1943) this committee recommended that this Association (1) request the federal Bureau of Animal Industry to publish a comprehensive bulletin or series of bulletins on parasites and parasitisms of domestic animals in the United States, and (2) request the deans of those veterinary colleges which are requiring less than 12 credits in parasitology to increase their requirements in this science to at least this level. Following approval of these recommendations by the Association, the executive secretary filed these requests with those concerned.

The chief of the Bureau has advised your committee that the present shortage of personnel makes it difficult to undertake new projects but that work on this assignment has been started. It will require some little time to complete it. He has stated that it may be necessary for the Association to assume the responsibility of publishing such material. Members of the Committee are attempting to assist in this work by forwarding to Washington speci-mens and pertinent information regarding parasitic diseases

The deans of two of our veterinary colleges have advised that they are increasing the requirements in parasitology; two have stated they have the whole subject of curricular revision under advisement; and all others have written that they have given the recommendation serious consideration, but that it seems inadvisable to make any curricular changes at present.

Your committee is glad to report, then, that progress is being made in carrying out the recom-mendations made last year.

Following a suggestion from one of the teachers,

your committee is attempting to make a list of all parasitologic materials and supplies which are available as either loans or gifts and which can be used as teaching aids. This will be sent to all departments which teach parasitology in our veterinary colleges

The marked increase in movement of domestic animals from farm to farm in this country is apparently resulting in the establishment of some species of parasites in new areas. Our armed forces, returning from the different war zones, may bring with them, either in their pets and mascots or in their own bodies, parasites which are not at present established in this country. In spite of all vigilance on the part of our sanitary officers, veterinary practitioners may find themselves called upon to diagnose and treat outbreaks of parasitic diseases which are new to them and their localities. Your committee urges all members of our associa-tion to watch for such outbreaks. The committee recommends:

recommends:

(1) That this Association and its individual members assist the Bureau of Animal Industry of the United States Department of Agriculture in any way possible in collecting and identifying parasites of domestic animals in order that the contemplated publication or publications on this subject may be as complete as possible.

(2) That the deans of the veterinary colleges concerned be urged to keep in mind the request regarding their curricular requirements in parasitology which was filed with them last year.

(3) That this committee be continued.

s/B. T. SIMMS, Chairman D. W. BAKER G. A. Ros G. A. Rose J. N. Shaw J. H. Whitlock G. DIKMANS R. E. REBRASSIER

Nomenclature of Diseases

The Special Committee on Nomenclature of the Diseases of Animals has been in existence since November, 1938. Three short reports of progress have since been submitted—see J.A.V.M.A. 97, (1940): 485; 99, (1941): 447; 101, (1942): 451. The matter of collecting, compiling and classifying the terms used to designate the diseases and pathological conditions of animals, together with the fact that the committeemen are widely distributed geographically and most of the work must be done through correspondence, tends to prolong the completion of a final report.

With few exceptions, the membership of this committee has remained unchanged. This is highly desirable because the nature of the work is such that it does not lend itself to shifts or changes in personnel. The size of the committee should be increased and the membership selected from such areas in the field of veterinary medicine and sur-gery as will best fit into the program already in force.

One of the principal and also one of the vitally important matters with which the committee has been dealing during the past year is that of developing a system for the cataloging of the names or terms used to designate the diseases of animals. The outline of a scheme which is now before the committee for consideration has a dual basis of classification, namely topographical and etiological. It is closely patterned after the Standard Classified Nomenclature of Disease used in many of the hospitals and clinics for human beings, and is indorsed by the American Medical Association. The outline, together with a few brief comments, is submitted:

Outline or Schema for Cataloging the Diseases of Animals

DISEASES OF THE BODY AS A WHOLE

Due to prenatal influences

Due to infections

Bacteria and bacterial toxins

Viruses

Fungi

Molds

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Yeasts

Protozoa

Helminths

Arthropods

Due to mineral poisons

Due to vegetable poisons

Due to allergies (hypersensitiveness, anaphylactiform)

Due to physical forces (trauma, thermic influences, lightning, etc.)

Due to circulatory disturbances

Due to innervation disturbances

Due to or associated with metabolism and nu-

trition

Water Protein

Carbohydrate

Fat

Inorganic salts

Vitamina

Due to disturbances and dysfunctions of the endocrines

Due to neoplasms

Due to unknown and obscure causes

Note: The same etiological breakdown will be followed for each of the topographic categories and subcategories shown below.

DISEASES OF THE INTEGUMENT (skin, hair, feathers, hoofs, claws, etc.)

DISEASES OF THE BONES

DISEASES OF THE JOINTS
DISEASES OF THE MUSCLES, TENDONS, BURSAE
DISEASES OF THE HEMIC SYSTEM (bone marrow, blood, lymphatics, spleen)

DISEASES OF THE CARDIOVASCULAR SYSTEM

Heart Blood vessels

DISEASES OF THE RESPIRATORY SYSTEM

Upper respiratory tract (nasal passage, larynx, trachea)

Lower respiratory tract (lungs, pleura)

DISEASES OF THE DIGESTIVE SYSTEM

Mouth (lips, teeth, tongue, salivary glands)

Pharvnx Esophagus

Stomach

Small intestine Large inestine

Liver

Pancreas

DISEASES OF THE URINARY SYSTEM

Kidneys

Ureters Bladder

Urethra

DISEASES OF THE GENITAL SYSTEM (The state of

pregnancy, obstetrical conditions, and mal-

formations)

Female generative organs

Male generative organs

DISEASES OF THE NERVOUS SYSTEM

Central Peripheral

DISEASES OF THE ENDOCRINE SYSTEM

DISEASES OF THE SPECIAL SENSE ORGANS (eye, ear)

s/H. C. H. KERNKAMP, Chairman

F. R. BEAUDETTE

M. A. EMMERSON W. H. FELDMAN

I. A. MERCHANT H. W. SCHOENING F. W. SCHOFFELD BENJ, SCHWARTZ G. H. HART

FRANK THORP, JR.

Rabies

The Special Committee on Rabies makes the following recommendations:

- 1) That previous committee recommendations be endorsed.
- 2) Because of the standardization of rables vaccines and the requirement of the Federal Bureau of Animal Industry that all rabies vaccines must pass the Habel mouse test before release, a product of increased potency and uniformity is now available. It is recommended that prophylactic vaccination be endorsed by the Association, and that it be used in conjunction with other standard measures in controlling rables.
- 3) That the Committee be continued and authorized to meet with the National Rabies Committee on call.

s/C. P. ZEPP, Chairman

J. H. BROWN GLEN L. DUNLAP J. V. LACROIX

C. C. RIPE J. L. RUBLE H. W. SCHOENING

Food Hygiene

MEAT INSPECTION

In order to write a comprehensive report on the

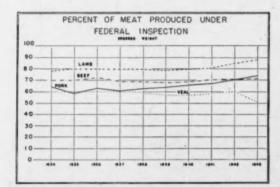
subject of meat inspection, it is necessary to dwell briefly on its history in the United States. The exclusion of American meat products from export channels was mainly responsible for the inauguration of federal meat inspection in 1890. This legislation authorized antemortem and post-mortem examinations of cattle, sheep, and hogs in-tended for interstate or foreign commerce. The evolution of federal meat inspection from this point to the present time encompasses a record of steady improvement and an ever increasing scope of duties

and responsibilities for the veterinary profession. Over the years since the inception of federal meat inspection, there has been a gradual change in the economic situation of the meat industry. The former importance of the export trade in meat and meat-food products has given way to a greatly in-creased domestic trade until we find that, just before the outbreak of the present war, a very small percentage of meat products were being ex-ported. Lend-lease shipments have changed this trend at least temporarily, and it is hoped and expected that a substantial revival of commercial export shipments of meat will follow as a natural result of lend-lease activities. Be that as it may, export shipments as compared with domestic trade will probably continue as a minor part of the American meat industry. This outlook emphasizes the need for a critical review of the reasons for maintaining the federal meat inspection service. It is primarily an instrument for guarding public health. When viewed in this light, the importance of the work to the people of this country and the scope of the problems and responsibilities of the veterinarians engaged in the work are better understood and appreciated.

derstood and appreciated.

In following the work of the federal meat inspection service, one is impressed with the close relationship between meat inspection and other functions of the veterinary service. The great accomplishments in eradicating and controlling animal diseases would have been impossible without the close harmony and unity of purpose which existed in the Bureau of Animal Industry. Progress in the control of animal diseases such

as bovine tuberculosis, and the widening of authority and responsibilities of officials in charge of meat inspection, make it imperative that veterinary education in meat hygiene be adapted to existing At the present time, meat inspection is



viewed from widely divergent angles by unrelated agencies, all having one purpose, yet resulting in unnecessary complexity and duplication of funcand authority. The need for close relationships between all branches of meat inspection, especially as they pertain to veterinary medicine and food hygiene, must be recognized. The veterinarian

in the field is responsible for the production of sound, healthy, marketable livestock suitable and desirable for human food. The veterinarian in the sound. packing house has the responsibility of deciding, first of all, between wholesome and diseased meat as determined by an efficient antemortem and postmortem inspection. Positive destruction of diseased and unwholesome meat, in so far as usage for food is concerned, is the next step in the proper conduct of inspection. The inspection service is vitally concerned with the sanitary surroundings and facilities of the establishment; the proper character and con-struction of the establishment; the conservation of products; sound methods of curing, processing, and manufacturing; proper packaging, labeling, and marking of products; and the determination as to whether products conform to various specifications issued by consuming agencies.

Meat production in 1944 is expected to be con-Meat production in 1944 is expected to be considerably larger than in 1943 or any previous year. Hog slaughter may exceed 100,000,000 head, and cattle slaughter is likely to be substantially larger than the 17,000,000 head slaughtered last year. Meat production in 1944 may total about 25 billion pounds on a dressed weight basis. Of this total around at least 74 per cent of the pook 72 per cent amount, at least 74 per cent of the pork, 72 per cent of the beef, 51 per cent of the veal, and 88 per cent of the lamb will receive federal inspection. There are no figures available to indicate the type of inspection, if any, that the remainder of this production will receive.

In 1942, there were 659 establishments operating under federal inspection. Of these, 303 conducted slaughtering. In 1943, the number of slaughtering establishments under federal inspection increased to more than 400 due to the provisions of emergency inspection authorized by the Fulmer Act, which provided for federal meat inspection during the war emergency for meat packing establishments engaged in intrastate commerce only. Independent establishments now operating under the provisions of the Fulmer Act were found to be in fair to good condition as judged by federal standards of construction and sanitary handling of products. Under the pro-visions of FDO-75.2, Amendment 7, federal inspection of cattle carcasses is required of all plants whose output exceeds 51 so-called "army style" carcasses per week. As the order only became effective April 1, the additional number of cattle to receive federal inspection is problematical at this time. Up to May 5, 18 slaughtering establishments have secured limited inspection under this order. Plants which came under federal inspection as a result of the Fulmer Act slaughtered during 1943 the following percentages of total federally inspected slaughter: Cattle 9.9 per cent, calves 6.7 per cent, sheep and lambs 5 per cent, hogs 4 per cent. These plants slaughtered in 1943 about 1,200. 000 head of cattle, 300,000 head of calves, 1,200,000 head of sheep and lambs, and 2,500,000 head of Many of these plants will probably continue under federal inspection after the war.

meat which is not receiving adequate inspection. Careful study should be given to the experience of California, which has a law providing mandatory inspection in counties with a population of 28,000 or over, and the placement of municipal meat inspection systems under state approval and super-There is little doubt that, with the advent locker system and improved facilities for of the locker system and improved tachines for local cold storage, there will be an ever increasing consumption of fresh meat by rural populations. It is unfortunate that, under federal meat inspection, only those plants which prepare meat or products for transportation in interstate or foreign commerce are required to operate under the inspection. The purpose is well stated in the law as follows: "... for the purpose of preventing the follows: ". . . for the purpose of preventing the use in interstate or foreign commerce . . . of meat and meat food products which are unsound, un-healthful, unwholesome, or otherwise unfit for human food. . . .

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However, this excellent statement is limited by the penalty provision of the Act which refers to transportation of meat or products from one state to another. It would be preferable if the Act conferred the full measure of authority over meats and products in the channels of interstate and foreign commerce according to recent Supreme Court decisions regarding the application of the interstate commerce clause of the constitution. The responsibilities of the federal meat-inspection service would be considerably increased, thus narrowing the gap between the coverage by this service and the activities of state and local inspection services. It is well recognized that federal meat inspection is a public health measure and that the responsibility of safeguarding the health within the state rests with state and local governments. Compulsory meat inspection laws designed to cover all products sold for human consumption should be vigorously encouraged. The U. S. Public Health Service and other agencies interested in the sanitary handling of food for human consumption are waging a campaign to enlighten the public. The result is being felt in numerous cities, municipalities and rural districts. Much educational work must be done before other states will rise to the occasion and inaugurate measures, as California has done. This is a mammoth undertaking but is basically sound; the veterinary profession should be taking steps to prepare itself for the responsibilities that will ensue.

Frozen food lockers, if developed to their full potentialities after the war, can become an important agency in the marketing of farm produce, including meat. When thousands of these locker plants, with quick-freezing capacity beyond the needs of their own locker patrons, begin to handle meat and meat-food products, certain slaughtering and sanitary regulations must be enforced for the protection of the consuming public. These completeservice locker plants actually resemble in many ways small packing plants. Their services include butchering for the farmer, either on the farm or at the plant; also chilling, aging, cutting, grinding, curing, smoking, lard rendering, packaging, label-

ing, and sharp freezing. The fact that 83 per cent of the present locker plants cut, wrap, and freeze meats indicates that, of the total number, nearly nine-tenths might be classified as complete service plants; at the present time these plants handle nearly one billion pounds of meat each year.

POULTRY INSPECTION

Dr. Edward M. Lynn of this committee has already highlighted the shortcomings of poultry inspection in an interesting article in the Journal for April, 1944. However, in order that this report may cover the subject, the following excerpts from Dr. Lynn's paper are being included:

"To understand the poultry-meat situation one starts with the customary classification of the content of the customary classification of the customary classificatio

"To understand the poultry-meat situation one starts with the customary classification of market fowl: live poultry, drawn poultry, and eviscerated poultry. Live poultry' is self-defined. 'Dressed poultry' is the familiar whole fowl carcass of the market—feathers removed but otherwise intact. 'Drawn poultry' of the American meat market is the fowl carcass from which the so-called internal organs, head, shanks, and crop have been removed. It is a class of poultry that is offered for sale without an inkling of expert supervision at the time of evisceration, or as to its handling thereafter, in violation of the established principles of meat inspection as a public health measure. Eviscerated poultry' is defined as the carcass of fowl subjected to critical examination under specific federal regulations at the time of evisceration, and destined to be cooked or frozen solid immediately or almost immediately thereafter.

"... At this state of food-inspection development in this country, complete sanitary supervision of live and dressed poultry found in the markets is too remote a prospect to be discussed in this paper. Except for regulations enforced by certain municipalities with the object of removing manifestly unwholesome dressed poultry from the local market, poultry-meat inspection, as of this day, is limited to the small percentage of the total poultry poundage that passes through the hands of the few eviscerating plants which maintain an approved



veterinary meat-inspection service under (federal) government supervision in order to meet the higher standards of excellence in soups, canned poultry meat, and eviscerated poultry for freezing.

"There are approximately (73) plants under

"There are approximately (73) plants under (this) inspection. . . . Poultry showing the following disease conditions are thereby removed from the market: Tuberculosis, Emaciation, Septicemia, Leucosis, Peritonitis, Tumors, Abscesses, Parasites, Putrefaction, Contusions and Cadavers.

"To these may be added such lesions as a trained veterinary inspector would naturally select as causes for condemning a meat. The services include sanitary supervision of the plant and its personnel, cleanliness of the inspected carcass before packing, and disposal of rejected material, all without overlooking any undesirable factor. . . . A weak spot in this service is the relatively small percentage of the total poultry-meat poundage subjected to this critical supervision.

"Although the accurate poundage of poultry consumed annually in this country is not available, it is conservative to set the figure at 1,755,000,000

pounds. . . "(In 1943) only around 100,000,000 pounds were subjected to the type of examination the food-consuming public should be enjoying. That is, the American public consumes 1,655,000,000 pounds of uninspected poultry. Considering that poultry, especially chickens, have a high morbidity and mortality, these data are worthy of attention in developing a food-inspection service such as health officers would desire. . ."

officers would desire. . . ."

As each 'phase of food hygiene is considered, certain problems are recognized. There is a dire need for universal postmortem inspection of poul-Interstate shipments should receive federal inspection. Intrastate shipments could be slaugh-tered and/or inspected at municipal establishments to best utilize available personnel. need for uniform veterinary inspection is realized, and it would appear that the most practical suggestion for improvement continues to resolve itself into a question of getting the proper information to the man who will be called upon to do the work. In other words, the more this problem is studied the more we are convinced that special attention must be given to the training, not only of veterinary students, but of all veterinarians who are at present, or who expect to be, engaged in food-inspection work.

A question of paramount importance is worthy of consideration at this time and should be answered. Is the training of students in veterinary colleges adequate to fit them for appointment to positions carrying the foregoing responsibilities, whether in the service of the federal, state, city, or county governments?

This committee recommends two improvements in our veterinary educational system to produce the desired results. Correction of imperfections and improvements would ensue as the topic is accorded earnest consideration.

1) A revision of meat-hygiene courses at accredited veterinary colleges based upon present day requirements and problems facing veterinarians in meat inspection so that the men responsible for meat inspection training in the colleges would have had at least three years of actual meat-inspection experience, preferably in a supervisory capacity, and not less than one year's experience in making final dispositions of diseased animals and carcasses.

That the possibility be investigated of organizing refresher courses in coöperation with the meat packing industry for veterinarians who engage in meat inspection.* Such a school should be centrally located, preferably in Chicago. It should be of at least thirty days duration and could accommodate twenty-five to thirty men drawn from different areas throughout the United States. In this connection, one of the most valuable adjuncts toward the establishment of uniform, efficient meat-inspection practices in the Veterinary Corps of the United States Army has been the Meat and Dairy Hygiene School in Chicago. While this school has dealt mainly with the training of veterinary officers in product inspection, the Army Veterinary Corps also conducts some postmortem inspection in localities outside the continental United States. Many army veterinarians have had no postmortem inspection experience and, for that reason, very few are in a position to conduct a complete and satisfactory examination. Since it is impossible for all of these men to obtain thorough and complete federal meat inspection experience, the immediate establishment of meat inspection schools would appear to be imperative.

As to the regulations to be adopted by a city, municipality, county, or state, the different conditions in various parts of the United States, and even within a state, will require different treatment. A meat-inspection ordinance, code, or regulation, to be effective, must give the inspector sufficient authority to deal with inspection and sanitary problems without fear of being ousted because he has performed his duty. A position of such importance, if subject to the dictates of politicians, is nullified for the purpose for which established, becomes the laughing stock of the informed, and provides a false sense of protection to those who are, unfortunately, uninformed. The position should be under strict civil service rules, with removal possible only for misconduct or inefficiency.

In the case of meat inspection, we recommend that, in so far as it can be made applicable, the federal meat-inspection regulations be adopted by states, cities, and counties. Also, in so far as applicable, these same regulations, supplemented by present federal regulations covering the postmortem inspection of poultry, are recommended as the basis of state, city or county regulations covering the slaughter of poultry.

DAIRY AND MILK INSPECTION

In so far as inspections, standards, ordinances, and codes involving milk and dairies, are concerned, the Committee submits as useful sources of information and guidance the contents of U. S. Public Health Bulletin No. 220. The provisions of this bulletin are now in effect in over 900 communities, 132 counties, and 3 sanitary districts located in 38 states and territories.

There has been considerable discussion as to the advisability of adding another year to the course in recognized veterinary colleges. If this is done, the Committee believes that serious consideration should be given to devoting a substantial portion of the additional year to the commercial and regulatory aspects of dairy and milk hygiene; at least in those instances where students declare an intention to specialize in that field.

The Committee also recommends:

That research for more practical means of treating mastitis be intensified and expanded.

That studies be undertaken to establish the relationship between reactions to the tuberculin test in cattle and findings of "no visible lesions," skin lesions and false reactions.

RESTAURANT AND FOOD HANDLERS

On these subjects, the Committee submits, as useful sources of information and guidance, the Ordinance and Code regulations contained in U. S. Public Health Bulletin No. 280, issued in 1943. We also submit the U. S. Public Health Service, Frozen Desserts Ordinance and Code, and their Manual for Sanitary Control of the Shellfish Indus-

^{*}The original wording as submitted by the Committee was as follows: "2) That refresher courses be organized in coöperation with the meat packing industry for all veterinarians engaged in meat inspection."

try. These codes are in general use in many states and health districts. Copies of these codes may be obtained from the Surgeon General, U. S. Public Health Service, Washington, D. C.

s/O. W. SEHER, Chairman
M. O. BARNES
A. G. BOYD
J. H. STEELE
J. H. STEELE

Brucellosis

Interest in brucellosis continues to gain momentum. Not only the veterinarian but the dairyman, the beef cattleman, and an ever increasing number of breeders of swine, share this increased interest. Add to this the gradually developing appreciation of the importance of Brucella infections in man, then brucellosis from the control standpoint rates as project number one in any all-out effort to meet the increased demands for dairy products, for beef and pork production, and for improving human health. A difficult goal to attain! A goal, however, that must and will be attained as our knowledge of the various aspects of the disease increases.

To be successful in controlling Brucella infections, we must make full use of all proved methods of control. All contribute to a common end. No one single measure has thus far proved supreme. The Bureau of Animal Industry reports that dur-

30, 1943, ing the fiscal year ending June glutination blood test for detecting brucellosis was applied to 5,185,228 cattle in the federal-state cooperative program, an average of about 432,000 a month. At this time, approximately 425,000 tests are being made each month. These figures include a large number of retests. Approximately 50 per cent of the tests are in herds located in sections of the country operating under the area plan. There are now 582 counties, in 24 states, classified as modified brucellosis-free areas. A few more where the infection is suspected to be counties. 1944. rather light, will be added on April 1, Testing under the area plan is being conducted in about 130 additional counties. Progress in the test-and-slaughter method under the county area plan has been more or less static thus far this year. This due, in part, to a shortage of manpower, many veterinarians as well as laymen previously engaged in this work are now serving in the armed forces. There still exists in many states, however, a considerable demand for this type of control and, had it not been for the shortage of personnel, much more progress would have been made. Other barriers which have confronted the test-and-slaughter program are high prices for cattle and the difficulty of securing replacement ani-Your committee realizes also that expansion the test-and-slaughter method of control has suffered as a result of the rapidly developing popularity of vaccination. The cattle population in our country has reached a new high. Perhaps the number is greater than we will be able to provide feed for. Feed reserves are rapidly diminishing; this situation and the possible occurrence of drought conditions might necessitate severe culling and even liquidation of large numbers of cattle. If such a condition should arise, interest in the test-and-slaughter method of control will be renewed.

CALFHOOD VACCINATION

Interest in the possibility of controlling brucellosis by vaccination is at present uppermost in the minds of a high percentage of cattle owners and veterinarians. Extensive publicity relative to vaccination has done much to acquaint the general public with the nature of brucellosis, but in so doing, it has caused confusion in the minds of

many of our cattle owners, as well as veterinarians, as to how vaccination can best serve our control efforts. Three and one-half years have elapsed since calfhood vaccination was approved as a part of the official control program against bovine brucellosis. Approximately 555,738 callves have been vaccinated under official supervision since January 1, 1941. A report of the yearly production of Brucella abortus vaccine by licensed manufacturers indicates the trend in the use of the vaccine during the past three years. For the year ending June 20, 1941, 1,525,100 doses; June 30, 1942, 1,640,800; June 30, 1942, 2,358,800. These figures do not include vaccine produced by the federal Bureau of Animal Industry. Immunization of calves with Strain 19 vaccine is recognized as an important step forward in the overall program of control. Calfhood vaccination, accompanied by a program of elimination of reactor animals, has been responsible for the greatest amount of progress in brucellosis control during the past year and, if properly directed, it will, no doubt, continue to contribute to progress.

The vaccination of young calves in infected herds, where they are at all times exposed to virulent strains of Brucella, presents a situation entirely different from the vaccination of calves in negative herds where they are not so exposed. This fact should be carefully pointed out to those who are contemplating a program of control based upon vaccination.

Calfhood vaccination with or without complete testing of the herd should not be generally adopted as a substitute measure for herd management and sanitation, or other acceptable control measures.

ADULT CATTLE VACCINATION

The use of Strain 19 vaccine in mature cattle has recently been proposed. In some states, this method is now being employed under official supervision, especially in herds in which the disease is both active and extensive. There are those who advocate adult vaccination in the form of revaccination of helfore previously. cination of heifers previously vaccinated as young This practice is suggested in herds in calves. which the infection may be mild but has not been completely stamped out. Clinical observations indicate that the vaccination of cows and of heifers over 8 months of age may be very helpful in con-trolling the disease, especially where it threatens to produce heavy losses. So much undercover vac-cination of calves and adult cattle has been performed during the past few years that the American Dairy Science Association, at its meeting in 1943, passed a resolution urging that further study and research on adult vaccination be made so that all dairymen might have more facts relative to its possible value. There is a great deal of speculation as to the effects and values of adult vaccination, but there exists an amazingly small amount of scientific information on the subject. sexually mature cattle are vaccinated, the owner must be prepared to accept certain disadvantages and losses. Cattle thus vaccinated may remain and losses. Cattle thus vaccinated may remain positive to the blood test for relatively long intervals, and a considerable percentage may fall to return to a negative status. Since legal restrictions bar the movement of cattle while they remain positive, the owner must be prepared to face this hazard if he resorts to adult vaccination. When recommending its use, veterinarians should call to the owner's attention the possibility of a certain percentage of the cows becoming systemically disturbed as a result of vaccination; also, that a certain percentage of the cows may continue to abort regardless of vaccination.

Bruce'la abortus vaccine, Strain 19, is at present being applied by the intradermic method in some herds under supervision in a few states. Sufficient time has not elapsed to determine whether cattle vaccinated by this route will receive more or less protection than those that are vaccinated by the subcutaneous method. The comparative results of these two methods of vaccination in relation to titer persistence will be watched closely.

THE PUBLIC HEALTH ASPECT OF ADULT CATTLE VACCINATION

It is a well-established fact that the vaccination of young calves with Strain 19 does not result in the permanent establishment of the organism within the mammary gland. We are not at present in a position to state that the same is true with respect to the vaccination of adult cows. If carrier cases are produced through adult vaccination, then our problem would be complicated rather than simplified. Very little is known about the virulence of Strain 19 for man. Adequate safeguards against the possibility of infection with this strain should be provided until such time as it is definitely determined that the organism is nonpathogenic to man.

It is a well-established fact that adult cattle vaccinated with Strain 19 remain positive for long periods of time. The blood serum agglutination test is inadequate to differentiate between a reaction resulting from vaccination and one due to infection with virulent field strains of Brucella. Because of our inability to make such distinctions, cows infected with virulent strains may be retained in herds where adult vaccination is being practiced. The milk from such cows might well constitute a real hazard to human health. Consequently, in those herds practicing adult vaccination, provision should be made for proper pasteurization of milk and for the careful management of any vaccinated mature animals carrying a positive agglutination blood titer.

RECOMMENDATIONS RELATIVE TO ADULT VACCINATION

a) In problem herds where it has been impossible to eliminate brucellosis by the test-and-slaughter methods, it is suggested that all calves, and negative and nonpregnant animals be vaccinated. The vaccination of the adult cattle should be used as a means of expediting the elimination of the disease from the herd and not as a permanent program. Vaccination must be performed under the supervision of a qualified veterinarian and in accordance with the program in effect in the respective states. All animals must be handled as reactors and managed as if infected.

b) In herds where there is active and extensive infection with a high percentage of reactors that are being retained, and in which calfhood vaccination is already being practiced, the question of vaccination of negative, adult, nonpregnant animals should be left to the judgment of the practicing veterinarian. The procedures elected are to be governed by, and in accordance with, the state laws.

c) The employment of Strain 19 vaccine in adult cattle should be discouraged in brucellosisfree herds, practicularly in herds where an attempt is made to keep the herd free from animals that react positively to the agglutination blood test. Vaccination of adult cattle should not be practiced in herds in brucellosis-free accredited areas, in modified accredited areas, or in areas in the process of becoming accredited.

d) The Committee commends the Bureau of Animal Industry for the strict supervision that is being provided in the production of Strain 19 vaccine and recommends that such supervision be continued.

The Committee makes these recommendations having clearly in mind that vaccination of adult cattle should be considered mainly as an expedient to tide over difficult situations in particular herds, especially during the emergency when it is abso-

lutely essential that we maintain as high a production of milk and meat as is possible. It is reasonable to believe that the proper use of adult vaccination will serve to decrease the incidence of brucellosis in heavily infected problem herds. It should not be continued in such herds, but should be followed by a program of calfhood vaccination. Such a plan would permit owners of herds as previously described to progress toward a brucellosis-free and resistant status, with a minimum of financial sacrifice.

SWINE BRUCELLOSIS

Because of the severity of Brucella suis infections and their comparative frequency of occurrence in man, swine brucellosis is now recognized as one of the important diseases of animals transmissible to man. Research in swine brucellosis has been vigorously pursued in several different institutions during the past year. Special attention has been given to various methods of diagnosis and control. The employment of the blood serum agglutination test as a means of recognizing infected herds and locating the infected and carrier animals is a dependable method. It is desirable at present that careful discrimination be exercised with regard to the interpretation of the "reactor" titers on the herd basis as well as on the individuals within the herd. Titers that can be construed as indicative of infection in a single animal may not apply in those instances where the entire herd is being surveyed and wherein the breeding history of the herd is and has been negative for infection for one or more years.

Of the control measures thus far employed, blood testing, segregation, and eventual slaughter of the reactor animals are believed to be the most reliable. Breeders of purebred swine should be encouraged to test their herds at frequent intervals. Such practice will greatly reduce the possibilities of further dissemination of the disease, which may readily occur through the sale of reactor animals, particularly boars.

Your committee recommends the continuation of the control practices as outlined by last year's

committee.

RESEARCH WILL EVENTUALLY PROVIDE SUCCESSFUL METHODS OF CONTROLS

To improve our knowledge and thereby establish more effective methods of control, we must be more active than ever in our researches on brucellosis. We have every reason to believe that carefully conducted research will lead to the development of control measures superior to those now available.

The advisability of adopting a more intensive program of research is readily realized when one considers the widespread distribution of brucellosis, its economic importance to the livestock industry, and its relation to human health. Relatively small appropriations for research today may mean huge savings to the livestock industry tomorrow—even greater savings when one considers the removal of public health hazards not fully appreciated by the layman. The committee appreciates the fact that Strain 19 vaccine, as presently apprepared, is far from being an ideal immunizing agent; that all who are working on the control of this disease would be greatly benefited if an immunizing agent were developed which would give susceptible animals a higher degree of protection, one that would produce lifelong immunity, and that could be safely given all animals in the herd regardless of age. It is recommended that research be conducted with nonliving as well as modified living vaccines. A vaccine of the former type would not only safeguard human health but would allay all fears of producing disease in highly susceptible cattle under different environmental conditions.

Research in connection with attempts to improve the vaccine prepared from Strain 19 should also continue. While it is generally considered that the vaccine, when introduced into young calves, is a safe and sound procedure for building resistance, we must not lose sight of the fact that the product must be carefully handled and stored, as it has been definitely shown that the present vaccine is more or less unstable and is subject to extraneous more or less unstable and is subject to extraneous influences, some of which may cause a loss of viability. The question of the persistence of resistance or immunity produced by Strain 19 must be studied further in order that we may know the period of time when we may expect such resistance to disappear and whether additional subsequent vaccination may be desirable and practical. The Committee recommends that extensive The Committee recommends that extensive experiments involving revaccination be conducted in herds where immunity from calfhood vaccination has failed to give a high measure of protection over a long period of time.

Your committee recommends increased activities in our present educational programs on brucellosis. Education, careful planning, and widespread publicity of the proper type is necessary to overcome the confusion now in the mind of the average farmer relative to the procedures he should use in overcoming brucellosis.

The Committee recommends greater uniformity in control measures and sanitary regulations by the various states. The Committee further recommends that we continue to stress the importance of sanitation which is, and always will be, of the utmost importance in the control of all infectious disease.

SUMMARY

In summarizing, the committee emphasizes the need of increasing our educational facilities. Education is most imperative. We stress the need of greater uniformity of control methods, the vigorous pursuit of research, the importance of herd management and sanitation, and the necessity of a wholehearted cooperation of all the different we have every reason to believe that we shall continue to do so. We must not become discouraged even though we should temporarily lose ground. Therefore, the Committee urges that every effort be made to hold the ground that has thus far been gained in the battle against Brucella infections. A more enlightened public, new discoveries, and perserverance will eventually succeed.

> s/W. L. Boyd, Chairman C. H. CASE
> W. E. COTTON
> C. U. DUCKWORTH G. W. JENSEN HERBERT LOTHE GEO. A. RATHMAN

Interstate Shipment of Livestock by Truck

The report of your committee on Interstate Shipment of Livestock by Truck at the annual meeting in 1943 indicated the desirability of an amendment to the federal 28-36 hour law which would include the movement of livestock by truck.

At a livestock conference held in Chicago May 21, 1943, Dr. Mark Welsh, secretary, U. S. Live-stock Sanitary Association, was unanimously chosen chairman of a special legislative committee. to the resignation of Dr. Welsh, Dr. R. A. Hendershott was appointed secretary of the aforementioned Association, and the chairmanship of the special legislative committee likewise was delegated to him.

Dr. Welsh, in commenting on the transfer of his duties, stated that he would be glad to go to

Washington at any time with Dr. Hendershott and assist in an attempt to obtain some improvement livestock transportation laws, bring the situation to the attention of a congressman or senator and carry through from that point.

Under date of March 20, 1944, we received a letter from Dr. Hendershott together with a copy of one which he had addressed to Mr. Walter J. Dethloff, general manager of The American Humane Association, 135 Washington Avenue, Albany, N. Y., which explains the status of his endeavor to obtain an amendment to the 28-36 hour law. This letter to Mr. Dethloff follows:

March 20, 1944.

My Dear Mr. Dethloff:

As you know from my previous communications, I had made arrangements to go to Washington the early part of last week to confer
with Congressman Elmer H. Wene regarding the suggested legislation extending the federal 28-36 hour law relative to the transportation of livestock so as to cover the transportation of livestock by motor vehicle.

On February 17, 1944, Congressman Wene requested Interstate Commerce Commissioner

Splawn to advise him with relation to this piece of legislation. In a review of the present act, Commissioner Splawn had this to say: that the act is not administered by the Interstate Com-merce Commission and that the Department of Justice is required by the act to initiate proceedings when so advised to do by the Department of Agriculture in cases where there were violations. It was his judgment that the statute at present applies to the transportation, "by common carrier other than by water" and this would already include common carriers by motor vehicle. He further stated: "Although we have no definite information on the subject, it is my opinion that the great majority of persons transporting livestock by motor vehicle are common carriers, although many of them are exempt from regulation by the Interstate Commerce Commission. The fact that such exemption exists under Part II of the Interstate Commerce Act would not operate to relieve them from the requirements of the Transportation of Livestock Act."

It is the opinion of Mr. Splawn that no additional legislation would be needed and he stated that if there was any doubt that the term, "by common carrier other than water" in the statute at present does not include common carriers by motor vehicle, he did not see any objection to clarification of the statutes to make such inclusion definite.

I believe the provisions of the act should apply to the transportation by motor vehicle but believe that some of the principles, covering reasons for action as stated in our report, do not appear to him as being valid. In conclusion, he states: "I do not believe there is any necessity for an amendment to the statute for the reason that it already applies to common carriers and would seem to be unnecessary as to transportation by private carriers. transportation by private carriers.'

This opinion was rendered by a Mr. Blanning, one of the attorneys in the Interstate Commerce Commission to whom Congressman Wene directed letter with the idea of possibly obtaining a definition to cover the entire matter.

I have asked Mr. Will J. Miller, Livestock Commissioner of Kansas, to look into this matter of transportation of livestock by truck over distances and for considerable periods of time, and he has made and completed a survey of the transportation of livestock by truck on the Kansas City market and was of the opinion that none of the stock out there that is transported by truck is en route for much longer than

twelve hours at the outside.

I have had typed the memorandum which At-

torney Blanning prepared for Commissioner Splawn of the Interstate Commerce Commission, which in turn was presented to Congressman Elmer Wene from New Jersey and will await your reaction to this before proceeding further.

Sincerely yours, s/R. A. Hendershoft, Secretary-Treasurer, U. S. Livestock Sanitary Association.

It is recommended that the committee be continued.

S/C. C. FRANKS, Chairman

C. E. FIDLER

H. F. Dorson

Diseases of Dairy Cattle

The veterinarian and dairyman are interested in the maximum production of the dairy cattle of the nation. To accomplish this, diseases of cattle must be treated and controlled through active constration of the dairyman with his veterinarian.

operation of the dairyman with his veterinarian.

The committee desires to call special attention to the control measures for some diseases that affect the milk production of dairy animals, and some of the factors that influence the quality of the milk produced.

BREEDING PROBLEMS

Breeding problems, their diagnosis, control, and treatment are of vital importance to the dairy farmer and the veterinarian during this war period when keeping a nonbreeder and nonproducer in the herd is costly, due to high feed costs and wages. The Special Committe on Diseases of Dairy Cattle in 1943 appropriately stressed the importance of nutrition, heredity, breeding hygiene, and prevention of the more common herd diseases such as brucellosis and trichomoniasis.

Veterinarians, particularly those in cattle practice, should keep abreast of new information on all phases of cattle breeding. Veterinary colleges should stress these subjects and offer sufficient laboratory and practical work to make their graduates proficient. We cannot condemn laymen who perform this work if we ourselves do not provide more and better professional advice in the diagnosis and treatment of breeding diseases. We believe that competent veterinarians can offer dairymen invaluable assistance along these lines. Many practitioners are supplying this service on a monthly contract basis to the larger purebred herds in this country. There is a great opportunity for qualified veterinarians in this field to improve their position and the position of their profession with the dairymen of this country.

Artificial Insemination .--Artificial insemmation has become well established in the past five or ten years in many of the large dairy sections in the United States. It is estimated that in the past year breeding associations in New Jersey, New York, and Wisconsin artificially inseminated be-tween 90 and 100 thousand dairy cattle. The advantages of the method, such as extending the usefulness of outstanding sires at reasonable cost to smaller dairymen, are obvious. However, the limitations of artificial insemination have not been sufficiently considered. Its use to overcome sterility of females with diseased genital tracts has been greatly overrated by proponents of artificial insemination. Diseases such as brucellosis, trichomoniasis, and granular vaginitis may be widely spread by careless operators. Occasionally, ill trained operators inseminate a pregnant cow. if the pipette is passed through the cervix, abortion frequently results. The veterinarian's background and training especially fit him for artificial insemination work, and most of the successful associations employ veterinarians. This committee This committee

feels strongly that this field is not one for a poorly trained layman.

Granular Vaginitis.—Granular vaginitis or vulvitis, often spoken of as nodular venereal disease of cattle, is a common and widespread infection of dairy cattle of all ages. It is characterized by small papules or granules on the mucosa of the vulva or penis. The exact etiology is not known, although various authors have stated that it is due to a streptococcus, Streptococcus vaginitidis, a virus, or both. It may be spread by indirect contact or by coitus. The importance of this disease is not thoroughly understood, because many cows continue to breed satisfactorily, even though chronically affected. Possibly, acute outbreaks may interfere with normal breeding and conception.

Affected cows and bulls should be given sexual rest for one to two months. Numerous treatments have been proposed for this disease. Some of the more common and current ones are: dusting the affected mucosa once or twice a week for three to four weeks wth a 1 per cent silver picrate powder, bismuth formic iodide power, or sulfanilamide powder, using a modified Shelanski insufflator; applying a 1 per cent acrifiavine ointment made up with equal parts vaseline and mineral oil, once or twice a week for two to three weeks. Since little or no immunity is built up by an attack of this disease, it is a troublesome condition to completely eradicate from a herd. More research work should be done on this widespread disease.

Hormone Therapy.—In the past five years, the sex and pituitary hormones have been widely used in treating sterility in cattle but with variable results. Relatively few controlled experiments have been made with hormones for this purpose; nevertheless, many veterinarians are using them. The synthetic estrogen, diethylstilbestrol, has been used successfully in doses of 10 to 50 mg., for treating anestrus in cattle due to a retained corpus luteum, pyometra, or mummified fetus, and in cases of metritis and retained placenta. In some cases the results are excellent; in others, failures occur. Veterinarians have noted symptoms of mastitis (flaky, abnormal milk) in an occasional cow, and a marked drop in the amount of milk following the larger doses of stilbestrol.

Testosterone, the male sex hormone, has been used in doses of 75 mg. in slow breeding bulls to increase sexual desire. Often, it is also necessary in these bulls to improve the ration by reducing the bulky feed and giving the bulls additional exercise. Vitamin C, 1 to 2 Gm. twice a week subcutaneously, is often useful in these cases.

Anterior pituitary hormones or anterior pituitary-like hormones, from the pituitary gland and blood of pregnant mares respectively, stimulate the formation of ovarian follicles, ovulation, and the development and luteinization of the corpus luteum. The latter influence of these hormones has been shown, by some research workers and veterinarians, to be of value in treating nymphomania. Sterility in heifers that fail to show estrum may be treated by one of these gonadotrones.

by one of these gonadotropes.

The posterior pituitary hormone or extract is well known to most veterinarians, and is useful following normal birth, dystocia, and prolapse of the uterus to produce a rapid involution of the uterus. A number of veterinarians advise one or several injections of posterior pituitary extract immediately following birth of the calf as a means of reducing the incidence of retained placentae. This hormone is sometimes useful in causing the "let down" of milk in cows that fail to respond to the normal stimulus of milking.

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CONTROL OF BRUCELLOSIS

With introduction of Strain 19 Brucella vaccine, several programs are available for the control of brucellosis in dairy herds. It is essential that veterinarians acquaint themselves thoroughly with

the various aspects of vaccination and the bloodtest plans officially approved in their state. Before beginning any control plan, the veterinarian should discuss the various programs with the farmer. The herd owner should be acquainted with both the advantages and disadvantages of the programs available. He should thoroughly understand what he is trying to do, and the limitations and pitfalls of the blood test and vaccination of calves or cows. If brucellosis is to be controlled in any dairy, it requires the close cooperation of the farmer and the veterinarian.

KETOSIS

Regardless of whether ketosis is classed as a symptom, or as a separate disease entity, it still presents the problem of specific treatment because we lack fundamental information on its causative nature. It seems rather definite at this time that this disturbance can not be prevented completely by feeding. Research shows that some cows do not possess the power to store sufficient energy to offset ketosis during the strain imposed by lactation. Therefore, in those cases which have shown a predisposition to ketosis, it is suggested that they be closely observed, during the lactation period especially, for the symptoms which may occur at any time during that period. It has been frequently observed that some cows do not develop ketosis until near the end of lactation.

Oftentimes, the danger signal for ketosis in a high producing cow is when the owner or herdsman reports the animal to be "slightly off feed." A test of the urine at this time will often disclose the presence of ketone bodies, and prompt, sustained treatment will quickly rectify the condition. The preferred treatment for ketosis seems to be the one which gives satisfactory results in a given instance. It does not necessarily follow that a treatment which is successful in one case will be entirely successful in another. This may be due to the individual needs or degree of depletion in the animal, feeding conditions, or environment. Cases of ketosis have been observed in the same herd where different methods of treatment were required to bring about a favorable response. However, most treatments are centered around the thought of supplying an abundance of readily available carbohydrate for rapid restoration of the body sugars. In this manner, it is believed that a minimum of liver damage results and permanent restoration of health is more certain.

DISEASES AND INJURIES THAT AFFECT MILK PRODUCTION

Diseases of the digestive system, if not properly treated in the early stages, develop into subacute or chronic conditions that require prolonged treatment with resulting severe loss of milk production.

The dehorning of milking cows without nerve blocking may cause a considerable drop in production in some cows. In cases where proper nerve blocking is carried out, there is less loss in production.

Injuries to the knees and hocks of stanchioned dairy cattle require prompt handling and treatment to prevent loss in milk production. No treatment is satisfactory unless the animal is moved to a box-stall or large tie-stall with smooth walls and a suitable floor to prevent further injuries. If handled properly, many such cases will respond promptly to treatment and maintain their production. Sore and diseased feet of dairy cattle cause a considerable loss in production in many herds. The remedy is to pay more attention to the feet of lame cows, give them proper treatment, and their production will rise.

Many other diseases and conditions in dairy cattle indicate the need for constant education of the dairy farmer as to the value of veterinary services in maintaining milk production.

NUTRITION

The science of nutrition and feeding has advanced very rapidly. It is important that we keep ourselves constantly informed of newer advances, particularly in these times. It is essential that losses due to improper nutrition be controlled; at present, this is more difficult because of the shortage of certain necessary feed ingredients such as animal proteins and cereal grains. Important sources of minerals and vitamins, such as bone meal and cod liver oil, are also restricted. These shortages are made more acute by the increased number of livestock.

The proper nutrition of dairy calves is essential to their growth, development, and the prevention of the calfhood diseases, particularly scours. The report of the Committee on Diseases of Cattle in 1943 covered this field very well. Dairy work has shown that niacin, one of the vitamins, and ascorbic acid, vitamin C, as well as vitamins A and D, are essential to normal development and prevention of scours and pneumonia in calves. Most colostrum is fairly rich in these essentials, particularly vitamin A, so for this reason it is necessary that calves receive colostrum. Many dairymen supply concentrated cod liver oil 1 to 2 drams daily, until the calves are 4 to 6 months old. Vitamins of the B complex may be supplied by brewer's yeast, 1 oz. daily, until calves are about 4 months of age. Ascorbic acid is diffiobtain at the present time, but certain companies supply capsules for calves containing all these ingredients. Although the previously mentioned nutritional elements are needed by the calf, proper care, management, and housing are of fundamental importance in preventing losses due to calfhood diseases.

Dairy cows should be allowed a dry period of at least six to eight weeks. During this time they should have a balanced ration including minerals and grain. Feeding of yellow corn is desirable, or if this is not available, green leafy alfalfa may be substituted to build up vitamin A reserves. Recently, work has been reported on the feeding of large amounts of vitamin D in the form of irradiated yeast or irradiated ergosterol during the dry period to prevent milk fever. As yet, the results of this work are not conclusive. Lately, work has been done on the effects of vitamin B₁ and vitamin A therapy in dairy cattle to improve the appetite and assist in recovery from acetonemia. The results look promising. Vitamin B₁ may be obtained in pure form for intravenous injection or fed to the cow in the form of dried brewer's yeast.

Dry, as well as lactating, cows should receive liberal amounts of calcium and phosphorus. amounts of these minerals present in the usual grain ration are not sufficient, particularly if the cow is lactating heavily, if the quality of roughage is poor, or if the grain ration is low in high protein grains such as cottonseed, linseed, or soybean-oil-meal. At the present time, when steamed bone meal is scarce, one may use defluorinated ground rock or dicalcium phosphate as a substitute. Calcium and phosphorus are essential to body metabolism and deficiencies in these minerals may result in osteoporosis, arthritis, or breeding difficul-Other minerals are also essential in certain areas of the country. Iodine is deficient in most of the states bordering the Great Lakes and in the north-central states. This may be supplied in the salt in the form of potassium lodide, 1 oz. for every 280 lb. of salt, or in iodized salt with a stabilized iodine content. Cobalt deficiency has stabilized iodine content. Cobalt deficiency has been reported from certain areas in Michigan, and it probably is lacking over wide areas causing deprayed appetite, a rough hair coat, and slow growth. Copper, iron, and possibly cobalt deficiencles have been reported in sections of the South, particularly Florida.

Because of the lack of high protein grains, the dairy farmer must rely more on his home-grown plant proteins. Alfalfa is of special value in compensating for this lack of protein in the grain. The importance of mineral supplements is stressed again at this point, because high protein grains contain much of the calcium and phosphorus present in the average dairy ration.

ent in the average dalry ration.

This year, in certain sections of the country and on certain farms, the relative scarcity of feed in relation to the increased cattle populations must inevitably result in an increased number of deaths due to inanition and diseases associated with starvation and lowered resistance, such as internal and external parasitisms and pneumonia. Where such conditions exist, the veterinarian should advise the farmer to cull his stock and supply the remainder with an adequate ration.

Grain and forage crops grown on "cropped-out" farms are so low in certain food elements as to be nutritionally deficient for dairy cows. The Committee suggests that the state college or university of each state could render a valuable service to the livestock industry by making analytical studies and properly charting each state for such soil deficiencies.

NUTRITION OF HEIFER CALVES

The demand for milk, as a result of the war, has been so great that many dairymen have neglected to feed the calves properly. Adequate nutrition for proper development of heifers is important in so far as their health and future milk production is concerned. A poorly developed cow cannot handle the feed that is essential to high milk production. As many as possible of the herd replacements should be raised on the farm. Calves and heifers should be prevented from sucking each other.

CALF SCOURS

With the advent of the sulfa compounds, distinct progress has been made in the treatment of calf scours. This disease of young calves can now be reduced to a minimum with the prompt application of some of the sulfa drugs that have a high bactericidal action and low rate of absorption, which make them quite suitable to administer several times daily in 2- to 3-Gm. doses. In uncomplicated cases of diarrhea in calves, sulfaguanidine has been found unequalled by any other form of therapy. Where the diarrhea is complicated with severe febrile or pneumonic symptoms, sulfapyridine or sulfathiazole in 1-Gm. doses given over short periods may be used in conjunction with the sulfaguanidine. However, prompt administration of sulfaguanidine at the onset of scours may often prevent the infection from spreading throughout the body and forestall pneumonic symptoms. The drug is easily administered orally in water, milk, or by capsule.

With the advent of an effective treatment for scours in calves, there may develop a tendency to pay less attention to sanitation in the calf barn. This attitude is unfortunate and the veterinarian should dispel it wherever encountered, for no matter how effective the treatment, it cannot replace good hygiene and sanitation in the calf-raising program.

PARASITES

Ectoparasites and endoparasites cause enormous losses each year to the dairy-cattle industry. These losses are of a varied nature, including loss of weight, failure of young stock to thrive, reduced production of milk, and even deaths. The losses are more important during wartime because feed is scarce and of poorer quality and the numbers of dairy cattle have greatly increased. We may expect increased losses in 1944 due to parasitisms and their complications.

Mange, both psoroptic and sarcoptic, in dairy cattle has in the past year or two become an important problem in many dairy sections. The U.S. Department of Agriculture, realizing this fact, stated, "Common scab, once widespread and serious, has been almost eradicated, but sarcoptic scab, once rare, is now becoming a real menace." Veterinarians observing this condition should report it to the proper state regulatory official. Mange is more prevalent and serious during the winter and early spring months in stabled cattle. Affected cattle on summer pasture often seem to recover, but the condition reappears the next winter. Psoroptic and sarcoptic mange are often difficult to differentiate clinically, but microscopic examination of skin scrapings from affected areas will provide an accurate diagnosis. Psoroptic mange mites, Psoroptes communis bovis, have longer legs and are usually larger than the sarcoptic mite, Sarcoptes scabiel, which has very short legs.

Psoroptic mange may be cured by dipping or by thoroughly spraying and scrubbing all affected cattle with a 2 per cent (sulfide of sulfur) lime-sulfur solution. This may readily be prepared by adding 1 part of the commercial concentrated lime-sulfur solution to 15 parts of hot water. A 0.5 per cent nicotine sulfate solution is also effective. Treatment must be repeated in ten to twelve days. Sarcoptic mange is more difficult to cure. The same solutions may be used, but treatment must be repeated four times at intervals of six to ten days. These treatments are difficult to apply in the northern part of the United States in the winter time. Following treatment of the cattle, the premises should be thoroughly disinfected to prevent reinfection.

Cattle lice, both sucking and biting, are widely distributed, and were a particularly serious problem in many dairy herds last winter, probably because of the lowered plane of nutrition of most cattle and the lack of efficient commercial louse powders. The louse infestation in most herds is characterized by itching, licking, and rubbing of affected parts, resulting in bare, denuded skin and a rough hair coat. In many cases, particularly in young cattle, the extreme louse infestation was a contributing cause of death last winter. This condition, like mange, is a winter problem in stabled In the southern states, or closely confined cattle. dipping or spraying of cattle is done with a 2 to 3 per cent coal-tar or saponified cresol solution, a 0.5 per cent nicotine dip, a 2 per cent lime-sulfur dip as in mange, or a solution of 100 lb. of sulfur powder, 10 lb. of cube or derris root, with a 5 per cent rotenone content, in 1,000 gal. of water. This treatment should be repeated in 17 to 21 days. In the northern states, dipping or spraying might be done in the early fall or late spring but, during the winter months, careful grooming, and brushing raw linseed oil, crude petroleum or equal parts of kerosene and cottonseed oil thinly but thoroughly into the hair is useful. Careful dusting and brushing into the hair of a powder com-posed of 1 lb. of derris or cube powder with a 5 per cent rotenone content, and 9 lb. fine sulfur or talcum powder, at three week intervals is good treatment. This year, derris and cube powder have been made more available.

Cattle grubs are a serious problem in dairy as well as beef cattle. The United States Department of Agriculture estimates that 50 to 100 million dollars annually are lost because of damaged hides, 40 per cent of all hides being affected. This disease is due to the larval form of Hypoderma lineatum or Hypoderma bovis which appears under the skin of the back in the late winter or early spring months. The only time for controlling this disease is when the larvae are under the skin of the back, where they may be destroyed by treatment. The oldest treatment is mechanical removal, which is occasionally followed by abscessa-

tion. Recently, it has been shown that solutions of 1 lb, of derris or cube powder with a 5 per cent rotenone content and ¼ lb. of soap added to 1 gal. of water or, 5 lb. derris powder, 10 lb. wettable sulfur added to 100 gal. of water, will destroy the larvae. The solution should be scrubbed into or sprayed on, the backs of all affected cattle once a month starting in February. More laborious, but less practical, methods of destroying the larvae by injecting various chemicals into holes made by the larvae have been demonstrated. In thickly populated dairy-cattle areas, town or county eradication projects are indicated.

Internal parasites of dairy cattle are not a severe problem except for certain sporadic outbreaks. Coccidiosis and stomach-worm disease (usually caused by Ostertagia ostertagi) cause occasional losses in calves or young helfers in every part of the United States, particularly if unhygienic conditions such as overcrowding, dampness, and poorfeeding practices favor the spread of the parasitic ova. Lungworm disease of cattle is also occasionally observed and is a cause for poor growth, unthriftiness, a chronic cough and, not rarely, deaths in young stock. In controlling and preventing these internal parasitic diseases in dairy cattle, proper and well-known hygienic practices should be followed.

MILKING MACHINES AND THE CONTROL OF MASTITIS

The use of milking machines has increased greatly during the past ten years. The saving in time and labor on the average, wartime dairy farm by the use of the milking machine has increased the demand for them. It is estimated by the United States Department of Agriculture that there are about 350,000 milking machines on farms in the United States. Many of these machines are operated by inexperienced persons who have only a slight knowledge of the fundamentals of the care and proper milking of a cow. Thus, mastitis has become a problem in some herds because of improper use of the milking machine. In correcting this condition, it is essential that veterinarians be well informed about milking machines and their proper use. It is urged that veterinary colleges include instruction in their curriculum on this important phase of mastitis control.

Procedure—(1) The cow should be properly prepared for milking by wiping and massaging the udder with an individual cloth soaked in a warm (110-130 F.), chlorine solution. One cloth may be used in a herd if it is allowed to remain in the chlorine solution between each use on the cows. In addition to cleaning the udder and teats, the wiping stimulates the "let down" of milk, but it should not be done more than one or two minutes before applying the milking machine.

2) Before attaching the milkers, several streams should be taken from each teat into a strip cup to detect any abnormal secretion and to start the milk so that the quarter will-milk out steadily after the machine is applied.

3) Fast milking should be practiced to increase milk production and promote better udder health. If the cow is properly prepared and the udder is normal, the machine should not be left on more than four to five minutes, except on very high-producing cows. One man should not be expected to operate more than two units. The teat cups should be removed as soon as they start "crawling" up the teats, or as soon as the quarters are milked out. This is essential to prevent injury to the cistern epithelium and the secreting tissues of the udder by the prolonged action of the vacuum.

4) Teat cups should be carefully rinsed in a warm (90-110 F.), chlorine solution (200-250 p.p.m.) between cows. This solution should not be used for rinsing cups for more than 10 to 20 cows; a fresh solution should then be used. This is an important procedure and has a very definite

place in mastitis control, because infection may be spread from cow to cow by contaminated teat cups.

5) Careful, but not prolonged, stripping of cows should be practiced, particularly in those cows suffering from chronic mastitis. Most normal cows prepared and milked properly will require little, if any, stripping.

6) Following milking, where practical, the teats should be dipped in a chlorine solution (200 p.p.m.) or other antiseptic preparation, thus preventing bacterial growth in droplets of milk on the ends of the teats.

7) The milking machines should be operated strictly in accordance with the manufacturer's directions. Increasing the vacuum or altering the rate of pulsations may produce incomplete milking, udder injury, or mastitis.

8) Cows in the herd should be examined carefully and classified, so that diseased cows are segregated and milked last. The proper cleaning and sterilization of the milking machine following its use is essential to the production of quality milk.

9) Cows with injured teats or lesions such as cowpox on the teats, particularly the ends of the teats, should not be milked by machine as the action of the vacuum in the teat cups aggravates the condition.

10) Other general measures commonly used to control mastitis should be observed, such as frequent disinfection of floors, use of ample bedding under the cows, providing adequate stall beds and partitions between cows, and care in the drying off of cows.

QUALITY OF MILK

Since dairymen frequently consult their veterinarian on problems of milk quality, the committee desires to call attention to some factors that influence the quality of milk. Every dairyman has it within his power to use procedures of milking and handling his cows that will greatly influence the quality of the milk produced. The following data show the influence of some of these procedures.

1) With cows physically clean and with healthy udders, milk with a standard plate count of about 20,000 was produced. When the udders and teats were wiped with a chlorine solution (about 200 p.p.m. of available chlorine), the bacteria count of the milk was only 6,800. By clipping the long hair on the udder and rear quarters at monthly intervals, the bacteria count was 5,000, or slightly lower than when the hair was long but wiped with a chlorine solution prior to each milking (6,800). The beneficial effects of both clipping and wiping were reflected in a bacteria count of only 550. With these data in mind, veterinarians can determine and recommend the procedures which will be practical in each herd.

2) The use of a strip cup to examine the first few streams of milk from each quarter yields a two-fold benefit: It reduces the bacteria count of milk about 4 per cent, and it also enables the dairyman to withhold from the herd supply the abnormal milk produced by any one quarter or cow. Frequently, the abnormal milk from one quarter will alter the appearance, odor, or flavor of the milk of an entire can. When this occurs, 40 quarts of milk are rejected at the milk plant as not fit for human consumption when the several pounds of secretion from the affected quarter should have been withheld from the main supply.

3) The time of feeding certain feeds or pasture that may impart off-flavors and odors to milk should be controlled. Cattle should have none of these feeds within a period of two hours before milking, if such flavor and odor defects of the milk produced are to be prevented.

4) The effects of inhaled substances on milk

flavor presents a real problem in correct ventilation of dairy barns. Experiments in which the cow inhaled a substance for a period of two hours before milking indicate that many drugs used in veterinary medicine may impart abnormal flavors and odors to milk. Examples are: turpentine, paradichlorbenzene, benzaldehyde, and camphor. Feedstuffs such as silage, onlons, garlic, and even manure impart off-flavors and odors to the milk.

- 5) Two instances of iodoform flavor in market milk detected by consumers were traced to the use of uterine capsules containing iodoform. In one case, the veterinarian had advised that the milk should not be used for three days, but even so, the milk from one treated cow imparted the medicinal flavor to the entire 100 gallons of milk produced, pasteurized and delivered by the dairy. The second case was similar. Here the veterinarian had advised that the milk should not be used for one week. After this interval, the milk from the treated cow still imparted the flavor to 200 gallons of milk. These experiences show that after using iodoform internally in the cow, the veterinarian should advise that milk from treated cows should be kept separate, checked for odor and flavor, and not added to the herd supply until free from all taint.
- 6) Occasionally, a veterinarian is asked to locate the source of a salty flavor in market milk and frequently in the milk of an individual cow. A thought that should be uppermost is the likely presence of mastitis resulting in the production of milk with a high salt content. If a large number of lactating cows are suffering from mastitis, the herd milk may have a salty flavor. One also should not overlook the possibility of leaks in the brine section of the milk cooler in the plant—this has been found to be the source of salty milk in several cases.
- 7) At times, the milk of an individual cow becomes definitely bitter toward the end of the lactation period, especially during the winter months. The usual history is that the milk is all right when fresh but becomes bitter on standing. This is caused by the action of the enzyme lipase which is present in large amounts in the milk of cows late in lactation. Heating the milk momentarily to a temperature of 140 F. or higher will inactivate the lipase and overcome the defect.

s/C. S. BRYAN, Chairman

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Diseases of Beef Cattle

According to the United States News of May 5, 1944, "There will be more meats in the butcher shops in the next few months. Orders for war uses have been cut. But housewives are warned not to expect comparative abundance to last. Slaughtering is falling off with the season. The supply of beef is enormous. It will be still larger. But the Army's need for beef is just about unlimited. Consumer demand runs ahead of supplies that can be released."

Two thoughts are suggested by this comment: (1)—The veterinary profession has not been found lacking in its protection of the beef herds against disease; (2)—While remarkable progress has been made in the prevention of losses in livestock, there are still many losses that should and can be avoided. An enormous amount of research needs to be done in order that the losses we are still suffering can be continually reduced.

The basic return on the investment in beef cattle production is the annual increment in the form of a calf crop. In many herds and localities, the number of calves dropped per hundred mature females is too low to give proper return on the investment and insure a constant flow of good replacements. Low calf crops are usually caused by one or more contributing factors such as low fertility of bulls and cows due to low food intake or lack of proper feed, especially of green pasture in drought years; inadequate bull ratio to females; improper bull management; uncontrolled breeding with calves being dropped during unfavorable seasons; bovine brucellosis; and nutritional deficiencies of minerals or vitamins.

VITAMIN A DEFICIENCY

Vitamin A deficiency is more prevalent among cattle than formerly believed. It is most likely to occur in young cattle under two years of age. It is frequently observed in weanling calves during the first winter as well as in feeder cattle under full feed.

Of the feeds usually available for winter feeding, only yellow corn and alfalfa hay are relatively high in carotene, and even these suffer considerable depletion with age or under adverse conditions of curing and storage. Small grains such as barley, wheat, oats, and millet have practically no vitamin A and such forage feeds as prairie hay, buffalo grass, grama grass, cane hays and straws are very deficient; so also are many protein supplements such as cotton cake. Other vitamin-A-rich foods sometimes available during a part of the year are green alfalfa, green peas, kale, carrots and pasture crops. In alfalfa, the maximum carotene content is reached just before the flowering of the plants. Slow curing, rain, sunlight, and frost are agencies which rapidly lower the carotene level.

During a favorable summer season, cattle may store up considerable reserves of vitamin A, provided they have access to pasture or other feeds high in carotene. In drought years or when on early-maturing grasses, the storage is much reduced. With good vitamin A reserves, the body may be adequately provided with vitamin A for five to six months. This time will depend largely upon the adequacy of vitamin A in the winter feed.

It is believed that cattle require about 5,000 to 6,000 International Units of vitamin A per 100 pounds per day, although some authorities regard lower levels as adequate.

Clinical manifestations of vitamin A deficiency

Clinical manifestations of vitamin A deficiency vary. Two conditions regarded as most important are exophthalmic amaurosis and xerophthalmia followed by keratomalacia. Exophthalmic amaurosis is characterized by protrusion of the eyeballs, dilated pupils, and blindness, the cornea being unaffected. The incidence of night blindness preceding the attack is suspected but not recorded. Xerophthalmia, followed by keratomalacia, resembles infectious keratitis but does not respond to treatment. Unless vitamin A be supplied, these cases develop constitutional symptoms and terminate fatally.

Urinary calculus may be due to lack of vitamin A. Other causes of this condition are recognized but feeding experiments, as well as clinical cases, are cited in which low vitamin A intake apparently played an important part, since no new cases developed following the use of shark liver oil.

Another condition related to vitamin A deficiency sometimes seen where cattle are on a prolonged feeding schedule (180 days) is anasarca. First, there is stiffness and swelling of the legs; later, large subcutaneous swellings extend over the regions of the shoulders and neck. Usually there is a state of high nervous excitability, and affected animals are liable to fits or convulsions if handled. Impaired vision and corneal changes often appear.

Breeding cows may become sterile if deprived of

adequate vitamin A over extended periods, as in drought years. Abortions are also common and calves carried to full term are often too weak to survive. Many are congenitally blind, due to undeveloped optic nerves. Animals in such herds often show a harsh dry skin, or acute dermatitis. Wounds or abrasions heal poorly and may remain open sores. Where natural foods rich in vitamin A are not available, fish liver oils high in vitamin A usually prevent or ameliorate the various pathological conditions described.

MINERAL DEFICIENCIES

Mineral supplements are necessary in many regions. The most commonly deficient minerals are phosphorous, lime and iodine. They can be supplied in the form of steamed bonemeal or dicalcium phosphate and iodized salt. The use of complex patented mineral mixtures is not recommended. too many instances, they are composed largely of nonessential fillers such as wood, charcoal, epsom, or glauber salts, sodium bicarbonate, and com-The required beneficial substances in mon salt. such mixtures often cost cattlemen as much as \$2,000 per ton.

ANAPLASMOSIS

Anaplasmosis is rapidly becoming a national problem in the cattle industry. At this time, there is neither an effective method of treatment nor means of suppression. It is appearing in new territory and herds every year in the middlewestern and western states. Several species of files and ticks are able to transmit the infection. In addition de-horning instruments, bleeding needles, and surgical instruments have been responsible for mechanical transmission of infection on a mass scale. Immune or recovered carriers are a common and potential menace to susceptible cattle, especially during the fly season. Disposal by slaughter of all cattle known to have recovered is the only method known at this time that can be used in suppressing transmission of this disease from carriers to other cattle incident to vaccination, collecting blood samples, or routine surgical operations such as dehorning and castration.

BRUCELLOSIS

From reports at state and regional meetings as well as from veterinarians, the indiscriminate use of Strain 19 vaccine on breeding females, regardless of age, and in some cases in total disregard of reproductive status, is occurring in large range or semirange herds of beef cattle. Such a pro-cedure may ultimately defeat the purpose and benefits to be derived from the proper and intelligent use of this product. A press release from Colorado quoting Dean I. E. Newsom reports "some disastrous results following the vaccination of pregnant cows with Strain 19 vaccine. Abortions followed in such large numbers as to indicate a direct relationship."

The federal Bureau of Animal Industry recommends that Strain 19 vaccine be used only in the calfhood-vaccination program and only on individuals between 4 and 8 months of age, or prior to reaching sexual maturity. It is presumed that the recommendations of the Bureau were made only after full knowledge of the physiologic and immunologic factors involved. Cattlemen have the choice of at least three officially recognized procedures aimed at the orderly removal of reacting individuals and ultimate total suppression of bovine brucellosis in a herd or commonwealth. A herd test is the only means of determining the extent of infection and identifying the individual reactors or potential reservoirs of infection. No program of suppressing bovine brucellosis can proceed intelligently or effectively without such knowledge. Calfhood vaccination is only an adjunct to other measures directed toward total eradication of bovine brucellosis.

Vaccination of mature cows does not alter the status of any reactor individuals, and it may result in making reactors out of otherwise negative ones. Nor does it influence the probability of future abortions in existing reactors to the test, as only a small percentage of reactor or aborting individuals abort a second time. Some reactors never abort, but many of these reacting or aborting individuals continue to carry infection indefinitely in the udder, thus perpetuating foci of infection in the herd. Infection may then be discharged in the milk and through the nursing calves to ground, water, and feed.

It is conceded that bovine brucellosis spreads slowly under open range conditions, but congrega-tion of large groups of cattle along the recently constructed drift fences on public domain in the western states has been demonstrated as the probable source of infection by exposing clean herds to infected ones, with subsequent outbreaks of brucellosis. In some instances, this was the only exposure to infection that could be established.

In some regions, snow and management conditions necessitate the concentration of large groups of pregnant females, regardless of age or repro-ductive status, on feed and bed grounds during the winter and early spring months. Feeding on the ground is a common practice, and discontinuance of such practice is urgently recommended. Several severe outbreaks of bovine brucellosis have occurred in the western states among herds thus fed in contrast to others where hay is fed in racks. As brucellosis infection readily occurs via the di-gestive tract, it is presumed that infection was contracted on a mass scale by ground feeding.

ANTHRAX

In some sections of the country, notably regions tributary to the upper Missouri and lower Mississippi Rivers, the Gulf region, western Nevada, the central valleys in California and southeastern gon, anthrax vaccination is required prior to pasture season or before placing cattle in certain fields In some areas, the or pastures at any season. In some areas, the highest level of immunity obtainable is required to protect cattle and utilize feed. In a few locali-ties in the West, even the use of vaccines giving the highest level of immunity is sometimes insufficient during warm weather and the only course is to move to noninfected, better drained, and cooler areas where fly and insect transmission is less probable. A rigorous and promptly executed program of carcass burning cannot be too strongly urged in anthrax outbreaks.

A wide variety of anthrax biologics are available on the market. Some types are not suitable for use in areas where the infection is extremely virulent and where immunity is constantly bombarded or may be broken down by infection from biting flies. Fatal anthrax infections may be superim-posed on an already existing subacute anaplasmosis infection with heavy death losses. Cattlemen in anthrax districts are urged to consult veterinarians or the livestock sanitary authorities as to the type

of vaccine required in such localities.

SHIPPING FEVER

The indiscriminate use of biologics in the hope of controlling shipping fever is to be condemned and discouraged. If used at all, they should be administered ten days to two weeks prior to ship-In some cases, when used on cattle during ment. an outbreak of so-called shipping fever, they may actually aggravate matters and cause severe reactions and losses. The underlying cause of the shipping fever syndrome is not well understood. It is probable that the several microorganisims found in the respiratory tract of cattle dead of shipping fever are secondary or opportune invaders appear-

ing after some primary factor, possibly an unidentified respiratory virus, paves the way.

All too frequently, livestock owners suffer tremendous monetary losses from animal diseases before calling for skilled professional advice or assistance. Most animal diseases are preventable and many are curable if the knowledge now available is put to proper use by those qualified to use Expert professional assistance is readily available through the veterinary profession as repre-sented by the practicing veterinarian and the state and federal livestock sanitary authorities. In addi-tion, these men have the assistance and support of specially trained and experienced individuals or groups in diagnosis and research on animal disease problems, and they stand ready to serve the livestock industry.

RETENTION OF FETAL MEMBRANES IN THE COW

There are many factors involved in retention of the fetal membranes in the cow. Since this is a report of work and progress it will contain a brief summary of the enormous amount of detail that is

required to cover the subject.

The objectives involved are a study of the fetal membranes and their communication with the uterus, and to conduct a search for evidence that will lead to the detection of the causes that in-terfere with the release of fetal membranes from the maternal cotyledon. The fact of the matter is, the determination of causes is of more impor-tance than the single item of retention of fetal It seems possible that a microscopic study of the tissues should contribute to the solution of some of the problems related to the gravid and the puerperal uterus.

The structures involved in the retention of fetal membranes are (1) the fetal membranes themselves, (2) the intermediate zone (the cotyledon) composed of a combination of out-growths of the fetal membranes and the uterus, and (3) the uter-ine wall. Only the intermediate zone and the fac-tors most likely to become involved in "retention" of the fetal membranes will be discussed at this

time.

In the photomicrograph (A) represents the maternal contribution to the cotyledon. It is derived from the lamina propria and the epithelial layer of the uterine wall. Its function is to form the or the uterine wall. Its function is to form the stroma of the cotyledon and to serve as a pathway for blood and lymph vessels running to and from the uterus, thereby establishing communication between the fetal trophectoderm and the uterus.

The fetal contribution to the cotyledon originates in the amniotic chorion which is of epithelial origin. Thus, an epithelial covered membrane pushes its villi into the crypts of a maternal connective tissue epithelial-covered matrix. The fetal villus carries with it the blood and lymph of the fetal circulation. It is a highly vascular organ. Those of us who are accustomed to seeing and feeling it in an inactive and degenerating state can hardly realize that in life it is an entirely different organ. The fetal villus (B) is covered by one or two layers of highly specialized cells of epithelial origin, the trophectoderm (4) so named because of its relation to nutrition. It may be that our principal interest in the cotyledon centers around the trophectoderm and that when we are able to interpret the picture, it will reveal the answer to certain phases of the problem relating to retention of fetal membranes.

In frozen and formalin prepared specimens, one finds a space (C) between the surface of the fetal villus and the maternal crypt. This may be an artifact due to the action of fixing solutions, or it may occur as a result of the release of blood pressure upon interruption of the fetal circulation. The opinion of investigators differs in regard to this and it seems that steps should be taken to explain its cause and significance. After all, the subject of this discussion relates to separation of fetal and maternal tissues.

Returning for a moment to a discussion of the circulatory system, one must not depend upon that situation as it exists in the human placenta as a guide in interpreting the cow's placenta. For example, in the cow, the union is epitheliochorial and does not present the picture of the trophectoderm being washed in blood as it is in the case of the human trophectoderm. On the other hand, the surface of a detached fetal cotyledon is covered with a thick, evenly distributed blood clot that can be removed by soaking in water. This seems to be proof that in life the trophectoderm is bathed in blood. However, the cross section of the cotyle-don, shows no evidence of free blood between the epithelial coats. At irregular intervals, one can find the space between the fetal and maternal surfaces bridged (6) by what appears to be strands of faces bridged (6) by what appears to be strands of collagenous tissue and the cells performing the contact do not have definite cell outlines (5). Whether or not these are true syncytial cells is not very important. The fact remains that the term syncytial seems to be a good one to describe this type of union (epitheliochorial). One must be very cautious about assuming that the situation seen in dead and formalin-fixed tissues is the same as it was during life. We can only visualize what as it was during life. We can only visualize what the condition really was at the time of death of the tissues. It is hoped that with proper preparation the microstudy of the tissues can be made to yield valuable information. There are frequent examples of anchorage between the fetal and maternal epithelial surfaces. These shouldn't be interpreted as of inflammatory origin. If these syncytial or anastomosing bridges were of frequent occurrence, then they might be suspected of playing an important rôle in maintaining union be-tween the fetal and maternal surfaces, but since they are not common they probably take a small part in retention of fetal membranes.

The amount of connective tissue or stroma found in a cotyledon is important in the interpretation of the histologic picture, since it affects the amount of nutrition the trophectoderm is re-ceiving, which in turn, relates directly to the problem of retained fetal membranes.

Summary.-The important things to be observed in interpreting the microscopic picture of a cotyledon are: A differentiation between maternal (A), and fetal villi (B). In each villus, one observes the size and shape (1), amount of blood and amount of fluid (2), the relative amounts of stroma (3), the character of the epithelium (4), the so-called syncytial cells (5), and evidence of anchorage (6).

The normalcy or abnormalcy must be interpreted with due consideration of the changes that take

place in an aging tissue.



A Cotyledon

A. Maternal villus; B. Fetal villus; C. Intercotyledonous space. I. Fetal epithelium; 2. Connective tissue of maternal origin; 3. Connective tissue of fetal origin; 4. Fetal epithelium; 5. So-called syncytial cell; 6. Anchorage.

Necrosis and edema are very common lesions, and placentitis is often, though not always, pres-

ent when the fetal membranes are retained. Calcification of necrotic tissues is not at all rare and, inasmuch as it is quite common to find calcium deposits in necrotic tissues, it would not be unreasonable to believe that calcification of the cotyledon is not at all uncommon. Experience has shown that retention of the fetal membranes inhibits involution, and cows that suffer with it require a longer period for involution to be completed. This gives secondary microörganisms a

chance to invade the uterus and many cows thus

affected have trouble in again getting with calf.

Since the uterus is one of the parts of the body that is attacked by the Brucella organisms, it is to be expected that brucellosis-infected herds will suffer more frequently from retention of fetal membranes than will brucellosis-free herds. If we could bring brucellosis under control comparable to that of bovine tuberculosis, the problem of retained fetal membranes would be decidedly of less importance. It is true that retained placentas occur in brucellosis-free herds but not with the same frequency or severity as in herds that are badly infected.

The condition of twinning is also conducive to the retention of the fetal membranes. A very high percentage of the cows that give birth to twins have some difficulty in expelling their fetal membranes. In addition to emphasizing the importance of brucellosis to retention of the fetal membranes with subsequent sterility, we should continue to emphasize the importance of careful feeding and management.

In a group of three (Drs. Boyd, Stewart, and Kingman), investigating the problem of retention of fetal membranes, two believe that the incidence of retained fetal membranes is much higher in spring and winter than in summer. Since at this time of year the forage usually is high in vitamins, one has a right to think of these nutritional factors as being of primary importance. In keeping with this thinking, there is clinical evidence at hand to support the view that in the absence of green pasture the incidence of failures to terminate gestation successfully can be reduced by supplying an adequate amount of carotene. The third member states that, in his opinion, one should be very careful about conclusions relative to the effect of the season upon retention of the fetal membrane. For example, in Minnesota most of the farmers do their breeding during the months of November, December, and January in order that their cows will calve in the fall of the year after the harvest has been completed. This represents a condition that should be taken into consideration by one who is attempting to determine whether or not retention of the metal membranes is more common during the stabling season that during the pas-In Minnesota, the cows are not on ture season. pasture until the latter part of May. It would hardly seem reasonable that such cows that are due to calve, let us say in June, could secure sufficient vitamins to prevent them from suffering with retained placenta, granting that avitaminosis may be a factor in the expulsion of the fetal membrane.

They agree that there are three major causes of retention of fetal membranes in the cow: (1) diseases, such as brucellosis; (2) lay removal of an afterbirth, or no care of the cow at all and the retained after birth not removed; and (3) nutritional deficiencies.

It is recommended that the Committee be conlinued.

s/H. E. KINGMAN, SR., Chairman

N. J. MILLER
J. K. NORTHWAY
I. W. MORANVILLE
L. R. VAWTER

Diseases of Sheep

The problems of disease control in sheep vary with the three widely divergent types of husbandry practiced. These are:

- a) Farm flocks, which individually are small but which aggregate the majority of sheep in the United States.
- b) Range bands, which usually are maintained in units of 1,000 animals. The number of range bands is small as compared with the number of farm flocks.
- c) Feedlot sheep.

These classes are not entirely separated and during part of the year some range sheep are maintained under conditions approximating those of farm flocks. This is more frequent in the case of purebreds and rams.

Improvement is imperative in: (a) nutrition, (b) sanitation, (c) control of parasites, and (d) control of infectious diseases.

NUTRITION

Much of a sheep's diet is composed of forage which otherwise would be wasted and every reasonable effort should be made to have all such forage utilized for food and wool production. Range sheep frequently are grazed on government-controlled reservations and the increasing restrictions on approved grazing areas and the greater cost of using them, together with the deterioration of many ranges, threatens to make the traditional methods of range sheep management uneconomic

of range sheep management uneconomic.

The mineral and vitamin deficiencies of farm flocks have been recognized and worthy educational programs are being conducted. The nutritional deficiencies of sheep maintained under range conditions have received less attention. Research is needed on the composition of range forages. Data on mineral, vitamin, and protein supplementation under range conditions should be obtained.

SANITATION

Three phases of sanitation deserve special emphasis: (a) lambing sanitation, (b) docking, castrating, and shearing sanitation, and (c) pasture and range sanitation.

Lambing sanitation, where range ewes are lambed in sheds, as is practiced in the more severe climates, is so difficult that the traditional methods are extremely insanitary. The application of disinfectant solutions to the lambing pens rarely is indicated, but greater cleanliness, the "tagging" of ewes prior to lambing, the replacement of soiled bedding, and the application of tincture of iodine to the navel of the lamb can be done with but little expense and no additional equipment. Lack of sanitation and failure to provide adequate protection for the lamb is responsible for much loss. Drainage and ventilation to reduce excessive moisture should be stressed in future buildings.

Docking and castrating sanitation, with the operations being carried out in a reasonably clean environment and the sheep kept out of flithy corrals after the operations, is important. Clean instruments, disinfected between each use, and the application of a mixture of equal parts of tincture of iodine and glycerine to the wound, are indicated. Shearing wounds should be treated by the application of the same mixture. Caseous lymphadenitis, tetanus, and other infections may be acquired through contaminated wounds.

Pasture sanitation, with the pastures being grazed alternately by other species of animals, is important in the control of nematode parasites.

Range sanitation is even more critical. Instead of the entire areas presenting a hazard, contamina-

tion is concentrated around convenient bedding and watering places. Frequently, these are used by many flocks during a season, and if any flock is heavily parasitized, the following flocks are exposed to infestation. The construction of watering troughs and piping the water is recommended where practical; otherwise frequently used bedding grounds and watering places should be avoided, especially where they are located in meadows or marshy areas. The common practice of maintaining ram flocks in restricted meadow pastures is to be deplored.

The treatment of entire streams and marshes to eradicate snails and hence the fluke danger, is practical in many regions.

PARASITES

Substantial progress is being made in the control of parasites, although actually such controllable infestations as scabies are far from being eradicated. Pasture sanitation, combined with phenothiazine medication, will control most nematode parasites living in the alimentary tract of sheep. Phenothiazine-salt mixtures are reasonably effective and are practical, although special conditions may warrant other technics.

Flukes are best controlled through snail-control programs, while the sheep ked can be eliminated by dipping in derris or cube powder suspension, and screwworm damage can be minimized by the application of diphenylamine-benzol combinations.

Improved parasiticides which have been developed and which will soon be released may have an important place in the control of sheep parasites. It is hoped that effective agents for the treatment of lungworm, fringed tapeworm, and fluke infestations will be developed.

INFECTIOUS DISEASES

Infectious diseases of sheep are, for the most part, regional. Contagious eethyma, infectious necrotic enterohepatitis, anthrax, blackleg, and possibly other diseases warrant active immunization if present in the area. The incidence of certain other diseases, such as lamb dysentery, caseous lymphademitis, swine erysipelas, infectious mammitis, vibrionic abortion, metritis, listerellosis, tetanus, necrobacillosis and foot rot can best be reduced by proper sanitation and by avoiding contact with carriers or active cases.

s/Ernest C. McCulloch, Chairman
E. T. Baker Floyd Cross
L. D. Frederick F. L. Schneider

Diseases of Swine

An important current problem in swine production is the limited feed supply. This limited feed supply presents a problem for the producers of all kinds of livestock, but has certain features which make it particularly advisable for the swine breeder and feeder to strive for increased efficiency. Since swine diseases are an important cause of waste of feed, the prevention and control of diseases which kill hogs or make them unthrifty is now of prime importance. In order to make the most effective use of the limited amount of protein available, it is recommended that the protein be fed principally to pregnant sows and young pigs. Pasture may be used as an important source of both protein and vitamins for older hogs.

The veterinarian has an important rôle to play in increasing efficiency in swine production. His experience and judgment are valuable to the farmer in deciding upon the animals that should be kept and those that should be removed from the herd. There are many unthrifty or stunted pigs which

should be removed early before they have consumed much feed. Moreover, there are hopelessly poor-doing shotes or older hogs which ought to be sent to slaughter for whatever salvage value they have. Some plan should be adopted whereby this kind of hog will be slaughtered rather than returned to a feedlot to further waste feed and possibly spread disease.

REDUCING DEATH LOSSES IN YOUNG SWINE

The death losses in newborn pigs are sometimes disastrous. Every effort should be made to protect the baby pig from chilling and from mechanical injury by the sow or otherwise. Careful feeding and management of the sow immediately before and after farrowing are important. It is now apparent, however, that more than these things is needed to insure the livability of the newborn pig. An important factor too frequently overlooked is the feeding of the brood sow during the entire gestation period. An adequate ration such as corn, oats, and tankage can reasonably be expected to help greatly in reducing baby pig losses, as compared with the feeding of corn alone. Pasture is valuable.

The heavy death losses as well as the unthriftiness which occur when the pigs are older than 2 or 3 weeks are traceable largely to errors in feeding the pigs, and to occurrence of infectious diseases or parasite infestation. It is during the period when pigs are, or should be, growing rapidly that the veterinarian faces some of the most difficult problems in properly evaluating the effects of malnutrition, infection, and parasitism. Proper nutrition may have little or no effect in some in reducing the damaging effects of most forms of parasitism. The success of the McLean County system of raising hogs is not attributable solely to avoiding or reducing worm infestation, but partly to the fact that the young pig is given an opportunity to eat what is needed to avoid anemia and supply other nutritional factors.

BETTER BREEDING

The improvement of swine by better breeding should be the constant aim of both client and veterinarian. It is sometimes necessary to take into account the possible influence of heredity in attempting to account for pathologic conditions or undesirable features encountered in herds of hogs. In these instances, considerable judgment and diagnostic skill may be required to avoid serious errors. Occasionally, little or nothing can be done to overcome heritable defects, except to discard the animals that are transmitting them. It is well to remember that the desirable, as well as the undesirable, features may be largely fixed by heredity. The geneticist and specialized breeder will be

The geneticist and specialized breeder will be concerned with longtime breeding programs. The veterinarian can greatly assist the farmer by instructing him as to the animals that are obviously unfit for breeding, such as those which transmit hernia. The infectious disease which is of particular importance in this connection is brucellosis. The possibility or likelihood of dysentery being carried over to the new pig crop by the breeding stock should also be taken into account. The selection of thrifty gilts from large litters of good-sized pigs and the mating of healthy animals that are not too young are simple principles that can be expected to give good results. In hogs, as in other livestock, the male breeding animal should be the best obtainable.

FEEDING

Feeding hogs during a period when feed supplies are short, as they are now, calls for methods which make the most efficient use of the available feeds. As has already been suggested, protein feeds can be used to best advantage for pregnant sows and younger shotes. It is difficult or impossible to supply adequate protein to the young growing pig in any way except in the feed. Older shotes can make better use of pasture, particularly legume, as a source of protein. The farmer should be encouraged to grow more pasture for hogs, particularly during this period of feed shortage. Green legume pasture is an excellent source of needed vitamins as well as protein. An otherwise unsatisfactory ration may be quite satisfactory when fed to hogs on good pasture. It now appears likely that many farmers who fail to provide some kind of pasture will have difficulty in producing a satisfactory crop of hogs during the coming season.

Common experience has indicated that pigs should be fed abundantly on the best obtainable ration right from the start, and should be thus fed until they weigh at least 70 to 80 lb. If, during this age period, the pigs are fed the wrong kind of feed or an inadequate amount of good feed, symptoms may appear which are difficult to distinguish from the effects of an infectious disease. Sometimes, it is possible to considerably improve a ration by increasing the number of ingredients in it. For example, the addition of wheat, barley, and a limited amount of oats to the grain portion of the ration for pigs may effect considerable improvement.

Frequently, the veterinarian is called upon to prescribe what may be called a therapeutic ration for hogs that are in trouble as the result of dietary deficiency or infectious disease.

If the symptoms and lesions of deficiency disease are diagnostic, as in rickets and in osteomalacia, the specific treatment is clearly indicated. If the precise nature of the deficiency is not recognizable, it may be necessary to supply a number of nutritional factors in order to supply what is lacking. In case of infectious diseases, particularly those affecting the digestive tract, the usual objective is to maintain nutrition to the greatest possible degree without further injury to the impaired organs. Bland and easily digested feed which supplies the required nutrients would be indicated. In some cases where there are symptoms of gastroenteritis, some practitioners withhold feed for a time in order to reduce the load on the digestive tract.

DISEASE CONTROL

The old adage pointing out the special merit of prevention, as related to disease, is still worthy of repetition. The veterinarian has been a very potent force in driving home to the farmer the lessons of disease prevention and control. However, there is still much work to be done before the task is finished.

The procurement of breeding stock and feeders is the point at which the farmers often fail to follow effective disease-control methods. By failing to obtain breeding animals from a healthy source, the breeder sometimes undoes the work of years, or lays the foundation for future failure rather than suc-Such an important disease of feeder hogs as, dysentery probably will not be satisfactorily controlled until the traffic in diseased and exposed hogs is stopped. It is in connection with this type of disease, as well as with hog cholera, that the sales barn merits special consideration. Unfortunately, the sales barn, while fulfilling a need in the community, is a means of disseminating disease. Public stockyards, where no inspection or control measures are applied, often disseminate destructive swine diseases. The farmer should be warned repeatedly regarding the danger of purchasing hogs from uncertain or infected sources. He should also make certain that hogs in transit are hauled in cleaned and disinfected trucks or other carriers; and that they do not pass through infected yards. As a further precaution, newly acquired animals should be held in quarantine or isolation for at

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Hog cholera is still the most important single cause of economic loss in hogs so far as infectious diseases are concerned. This loss continues in spite of the fact that serum and virus have been used for many years. These continued heavy losses from cholera suggest the advisability of considering and developing other means of aiding in the control of the disease.

Hog cholera should be given first consideration in diagnosing swine diseases. Of course, the mistake should not be made of regarding every hog disease as cholera. Care should be used to avoid the mistake of excluding cholera from consideration because of limited findings in the history, symptoms, and lesions during the early part of an outbreak. All agencies concerned with swine production should advise the hog raisers of the wisdom of vaccinating hogs for cholera before they gat sick

hogs for cholera before they get sick.

Enteritis should be considered as a pathologic condition occurring in several different diseases rather than as a disease entity. After an enteritis is found, there still remains the task of determining what was responsible for the observed disease changes. Such infections as dysentery and hog cholera should always be taken into account in attempting to determine the cause of enteritis. Other infections as well as errors in feeding also need to be evaluated in arriving at a diagnosis.

be evaluated in arriving at a diagnosis.

Dyscutery is a form of enteritis in which the essential gross changes are found in the colon. The presence of mucus and blood in the colon and in the bowel discharge usually makes possible a definite diagnosis. Occasionally, a hemorrhagic colitis occurs in cholera as well as in other infections, but there are usually clinical and pathologic features which furnish a satisfactory basis for differential diagnosis.

Salmonellosis is a term applied to pathologic conditions supposedly due to infection by members of the Salmonella group of microörganisms, particularly Salmonella choleraesuis. The finding of Salmonella organisms in the tissues of a hog does not fully answer the question of what was primarily wrong with the animal. These organisms are frequently found associated with hog cholera and dysentery. The question of how important Salmonella infection is in hogs can not be fully answered at the present time. There are cases of septicemic disease in which no other microörganism or virus can be demonstrated. It is believed these bacteria play a part in widely different pathologic conditions such as pneumonia and enteritis.

Erysipelas has been attracting considerable attention during the past few years. It has been reported particularly from large hog-producing areas. Its occurrence is somewhat seasonal, and, according to present opinion, it may have many manifestations. This latter feature of the disease suggests the necessity of using care in the differential diagnosis of swine diseases. Strict regulation of the use of live culture should be maintained. It is already apparent that popular demand may extend the use of live culture to an unwarranted extent.

Influenza is still with us. As yet, no preventive or control measures have been developed in addition to hygiene, sanitation, good nursing, and symptomatic treatment. Care should be used to distinguish between pneumonia due to influenza and that due to other diseases.

Brucellosis may defeat efforts to obtain a satisfactory pig crop. The agglutination test is a valuable aid in diagnosis when applied to a number of animals in the herd. It is of more limited value when applied to individual animals. The disease is frequently introduced into clean herds through an infected boar. Female breeding stock may also introduce the infection. The amount of infection in

a herd can be reduced by following the test and removal plan. However, this plan has thus far failed to eradicate the disease from several herds. Sometimes, the best plan is to dispose of the entire herd and start over with breeding stock from a healthy source. Swine brucellosis is transmissible to man, in whom it may cause a serious disease.

Pox is sometimes of considerable importance. The presence of a severe form of the disease may considerably increase the hazard of vaccination with hog-cholera serum and virus. The control of hog lice helps to control the spread of pox.

Icteroanemia is the term applied to a disease in hogs characterized by anemia, jaundice, and marked enlargement of the spleen. There is apparently a rapid decrease in the number of red blood cells; and death usually occurs within a few to several hours after the first recognizable symptoms occur. Shotes are mostly affected. The disease has some of the features of anaplasmosis. Its exact nature has not been determined. The death rate in the herd usually does not exceed 10 to 15 per cent, although the death rate of visibly affected animals probably approaches 100 per cent.

Rhinitis, of a deforming type, has been occurring on a limited scale for at least several years. It may be increasing in importance. The symptoms are sneezing, hemorrhage, and mucous discharge from the nose, and frequently marked distortion of the snout. The death loss is low, but the economic loss in affected herds is often great, due to the stunting effect of the disease. It is evidently transmissible by contact, and usually becomes more serious in affected herds from year to year. It is advisable to dispose of the entire herd and restock from a healthy source.

Diseases of the central nervous system occasionally present clinical pictures which make differential diagnosis difficult. Cholera sometimes affects the central nervous system causing the so-called nervous form of the disease. Pseudorabies has been reported as causing high death rate in some herds of young pigs. Listerellosis has been described as a separate disease of the central nervous system of swine as well as some other livestock. Except in the case of cholera, no special control measures are ordinarily applied to these diseases.

Parasitic conditions, particularly mange and intestinal worms, merit considerable attention by the veterinarian. Whenever possible, a system of sanitation should be followed for the prevention of worm infestation. The veterinarian's knowledge and skill should be more extensively used in worm parasite control, since attempts at treating hogs for worms by untrained and irresponsible persons result in considerable annual loss to the swine-growers. The control of mange in hogs does not receive the attention its importance merits. It is undoubtedly more important now than formerly. Many farmers apparently do not know that mange exists in their herds. In such instances, the veterinarian can render a valuable service by calling attention to the disease and applying some effective treatment, such as lime and sulfur.

Baby pig disease is responsible for heavy losses during the first few hours or days after the pigs are born. It is not certain yet what all the factors are that cause death losses in baby pigs. However, what the sow eats during the gestation period undoubtedly plays an important part in determining whether or not the newborn pigs are able to live. It is highly important that the pregnant sow be given the right kind of feed, starting at breeding time or soon thereafter. A ration of corn, oats, and tankage and alfalfa, or some other combination of feeds furnishing the essential nutritional factors can be expected to give good results so far as nutrition is concerned.

Anemia in young pigs appears to have been of more than usual importance during the past farrowing season. It has been the cause of some death loss, and has caused considerably greater loss by stunting the young animals. During a farrowing season, when the weather is unfavorable for getting the baby pigs outdoors, the owner usually needs to be reminded frequently regarding the necessity of putting sod or soil in the pens or dosing the young pigs with some iron preparation in order to prevent anemia.

Photosensitization or sun scald sometimes does considerable damage to hogs, particularly the ones which have white on their bodies. Hogs should be given plenty of shade during the spring and summer months. It may be necessary to avoid exposure to sun entirely while the hogs are running on pastures containing such markedly photosensitizing plants as alsike. Some of the other clovers as well as some nonleguminous plants have a similar effect, particularly when wet.

POTENTIAL SWINE DISEASE DANGERS

The importance of the majority of swine diseases depends upon the economic losses they now cause the swine industry. Others are important as potential future hazards since they may become well established in intensive pork-producing areas and seriously cripple pork production.

Vesicular exanthema, vesicular stomatitis, and foot-and-mouth disease are three examples of the latter class. Hence, it is felt that these three specific virus diseases should be called to the attention of the veterinary profession. These three diseases are clinically indistinguishable as they occur in swine. All three may produce vesicles of varying size and shape on the snout, lips, gums, tongue, coronary bands, interdigital spaces, pads of the feet, and on the teats of lactating sows. The formation of vesicles is preceded and accompanied by a rise in body temperature. Affected swine refuse to eat and exhibit extreme lameness during early stages. The vesicles rupture in from one to three days, exuding a clear fluid and leaving raw erosions that heal, in most instances, rapidly. Old foot-lesions often show evidence of secondary bacterial infection.

Vesicular exanthema occurs frequently among garbage-fed hogs in California and is now considered endemic on many large garbage-feeding ranches in that state. It has recently caused great economic losses in hogs held at public stockyards and packing house holding-pens, and has been responsible for considerable economic loss resulting from condemnations of hog carcasses on postmortem inspection. Other losses result from abortions among pregnant sows and death losses in litters of pigs 3 weeks old and younger.

Vesicular stomatitis has occurred on one occasion in hogs at a midwestern serum plant. To date, this is the only officially recorded, natural occurrence of this infection among swine in this country. Its close clinical resemblance to both vesicular exanthema and foot-and-mouth disease may result in considerable confusion in diagnosis whenever it occurs.

Animal inoculations are necessary for the differential diagnosis of these three diseases. Cattle are readily susceptible to foot-and-mouth disease and vesicular stomatitis virus but are refractory to vesicular exanthema. Horses are susceptible to vesicular exanthema, mildly susceptible to vesicular exanthema, and refractory to foot-and-mouth disease. Swine are susceptible to artificial infection with all three diseases.

Ships plying between our country and foreign countries, especially countries in which foot-and-mouth disease exists, are now touching ports not used during peace times. The movements of these vessels as well as the nature of their cargoes must be veiled in secrecy. The danger of introducing foreign animal diseases, especially foot-and-mouth disease, is greatly increased. Constant vigilance on the part of veterinarians is needed to protect the swine industry from foreign diseases,

in addition to the ones already here. A close watch should be kept on agencies such as garbage-feeding plants through which readily communicable dis-eases may be rapidly disseminated.

The Wartime Swine Industry Council was organ-

ized at a conference in Chicago April 3 and 4, 1944. This conference was under the leadership of Dr. Cliff D. Carpenter of the Feed and Livestock Branch, Office of Production of the War Food Administration. The Wartime Swine Industry Council is so organized that all phases of the swine industry are represented.

industry are represented.

A wartime pork production program was adopted and committees were appointed to make recommendations for handling the various phases of production such as feeding, breeding, management, marketing, and disease control. The Swine Disease Committee of the American Veterinary Medical Association had previously prepared "Suggestions for Keeping Hogs Healthy," which were adopted with slight change by the Committee on Disease Control of the Wartime Swine Industry Council Control of the Wartime Swine Industry Council.
Disease control is recognized as a very important factor in efficient pork production.

s/L. P. DOYLE, Chairman

T. L. STEENERSON B. B. WHITE

G. A. HAWTHORNE J. L. JONES

Diseases of Horses

The Committee wishes to emphasize the need for more research, with especial emphasis on equine brucellosis. In the last two decades, the horse has suffered more from lack of research than all other domestic animals. It is desirable that all our veter-inary institutions be given more financial aid from private and governmental sources for further research in diseases of horses.

Even though the horse population may have decreased in numbers, the quality of the individual animal has increased, as evidenced by the strength, size, and development of the Horse and Mule Assoclation of America and many other purebred horse associations. With the increase in value of the individual animal, due to the higher percentage of purebred horses and the potential postwar world-wide market, it is vital that more consideration be given to the improvement and advancement of the

horse industry.

The mere isolation of pathogenic bacteria is not the final answer to diagnosis of many infectious dis-These bacteria become active in the presence of lowered resistance. So it is that deficiencies in vitamins, minerals and endocrines are the object of so much interest. The addition of iodine to correct the condition of hairless and stillborn pigs, and the use of crude liver extract in cases of weak pigs and pups, are examples. Further clinical investiga-tion would be apropos in cases of septicemias in newborn foals, commonly called "navel ill" and "sleepers."

Research in blood chemistry on equines holds as much promise for future discoveries important to the horse industry, as has been amply demonstrated from work on other species of domestic animals and man. What little has been done in the field of equine blochemistry has led to such discoveries, for example, as the underlying disturbances in osteomalacia. This information has been of value, not only to the horse industry, but to other species because of its comparative significance. Further research in blochemistry, and particularly blood chemistry, is needed at this time. Such questions as the nutritional requirements and blood levels of the various inorganic elements, vitamins, and other essential factors demand thorough study, if we hope

to be able to breed and maintain sound animals. Consideration should be given to blood glucose, the acetone bodies and lipoids, as well as the various nitrogenous constituents of the blood; studies also should be made to shed light on why horses vary in their susceptibility to various diseases, their varying degrees of stamina, speed, and other fundatheir

mental physiologic differences.

One of our committee, Dr. Hopping of Atlanta, Ga., reports a disease of endemic proportions that occurs subsequent to shipping, which he refers to as gastro-intestinal toxemia, for the lack of a better name. He states: "Since Atlanta is the largest distributing point for mules to the southern area, we have suffered great losses from this disease. I am sure there are numbers of veterinarians who have never heard of it or come in contact with it due to the fact that it only occurs in mules that have been subjected to very recent, long, drawn out shipping. The usual history is that the affected animal has just been unloaded off the car. Investigation usually brings out that the animal has had a long, hard brings out that the animal has had a long, hard trip and possibly has been unloaded two or three times en route for feed, rest, and water, since leaving point of origin. The symptoms are pronounced fatigue, temperature 103-105 F. at the onset, mucous membranes very highly congested which in a few hours become cyanotic, weak to imperceptible pulse, breathing slow to shallow, and watery diarrhea; not unusual to have colic symptoms.

"Postmortem findings are inflamed mucous membranes of stomach and colon, contents of large colon most always liquid. Negative findings of any gross pathology are most always outstanding. This disease causes great losses each year in shipped mules and though we, here in Atlanta, have not experienced as much of it as we did during and for a few years after the first world war, we have had more of it this season than the last previous ones. This disease has received very little, if any, discussion in our veterinary periodicals. It is exemplary of the problems we encounter, but no help is available from any source sufficiently interested to delve into the complexities of such an outbreak, beyond the mere isolation of some infectious organ-ism that might well be of a secondary character. We reiterate the recommendations of the 1943

committee that further research in equine nutrition is needed. Outstanding is the work of Howell, Hart, and Ittner in finding that vitamin A deficiency results in night blindness, lacrimation, keratinization of the cornea, respiratory symptoms, reproductive difficulties, capricious appetite, progressive weak-ness, and death. In all cases, there developed a joint involvement with lameness and characteristic

rarefying lesions in the joint cartilages.

Some of the older diseases, such as periodic

opthalmia, laminitis, and azoturia, which have been made classical by the description of symptoms, are far from having their causative factors solved. We are still using symptomatic treatment in the acute stages, and supportive care in the convalescent periods. It is depressing and discouraging to have to tell our clients that nothing more is known about the causes of these conditions. More deplorable is the fact that practically no planned investigations of these maladies are now being made. In discussing periodic opthalmia with a United States B.A.I. authority, whose opinion is valued most highly and whose advice is sought by all of us, he said that the disease had been studied for a year or two several years ago upon the instigation and political pressure of a congressman, but that the studies had been dropped. If political pressure is needed to obtain research, we in the field can show that periodic opthalmia is a vital problem, that we still can tell the layman only that nothing new is ' lown about the disease, and that we can still offer only palliative treatment. It is accepted that periodic opthalmia is a recurrent uveitis. Is it not possible, then, that there may be more than one causative factor as is commonly accepted by many opthalmologists to be true in the human being? With this supposition, many of our investigators may be on the right track. Isolation of the foci of infection by more accurate diagnosis is a step in that direction.

The incidence of periodic opthalmia on farms has become a muted subject, as everyone is conscious of its contagious possibilities, even though no one has been able to satisfactorily prove how it may be carried. If you do not think these considerations are of importance, then question horse breeders and you will realize how they try to keep their horses away from such contacts. Yet their answers may be evasive for fear of criticism of their own establishments.

Another factor to be considered is the intercommunicability of brucellosis between various species of animals and man. There has been some research done on this disease in horses, but not on a scale sufficient to offer conclusive evidence as to the part the horse plays.

Brucellosis in the human family is frequently diagnosed with no more definite history of contact with infection than work done with horses having fistulous withers. Some of these cases also have shown uveitis. These individuals sometimes run a high brucella agglutination titre and may prove negative to other tests for diseases with similar eye maladies, such as tuberculosis and gonorrhea. Is anyone who nurses a case of fistulous withers or recurrent uveitis being exposed? What is the answer?

Many more cases would be found if laboratory facilities were available, or if technicians were sufficiently trained and interested in isolating brucella organisms. Intensive research has accomplished much with brucellosis in swine and cattle. The viability and infectiousness of the organism in these species are quite well known. For the primary study of brucellosis in horses, an effort should at least be made to correlate the various aspects of the disease, to collect and study the many isolated case reports, and to formulate the best diagnostic Much research is needed to standardize procedure. the best laboratory technique for isolation of the brucella organism recovered from horses. It is a slow-growing anaërobic organism that can easily be lost by the smallest amount of contamination with staphylococci. One laboratory authority says that he never discards a culture in less than six weeks. Since it is so difficult to isolate and grow, it is easily understood that a mistaken diagnosis may often be made in such common conditions as fistula of the withers, unless one is particularly in-terested or trained to isolate and differentiate various pathogens.

In a study of five cases without clinical symptoms, by Karlson and Boyd in 1940, where the diagnosis of brucellosis was made on animals which showed an agglutination titre above 1:500, positive pathologic findings were present. It is imperative that more exhaustive investigations of a like nature We have outstanding pathologists and be done. bacteriologists who are recognized by all allied professions as authorities in the field of brucellosis This is our own problem and we are investigation. letting it slip through our fingers. To progress, we need research on a much larger scale to determine to what extent brucellosis is a problem in horses. Isolated cases are recorded in the literature in which brucella organisms are found in horses, not only with fistulas, but also with osteomyletis, arthritis, and synovitis. Other cases have been reported in which the brucella organism was recovered from the liver, spleen, and kidney.

The infectious and contagious possibilities of brucellosis have not been impressed upon our profession enough for us to feel that brucellosis is an important economic entity in the horse industry, and that it warrants more consideration, not only by laboratory technicians, but also clinicians.

We need at least one research project to study the disease in horses intensively, and to correlate its many manifestations. Our state and institutional laboratories are either occupied with routine work or have not enough funds to maintain, for further study, horses showing clinical lesions of disease.

It behooves this association, as one body vitally interested in eradication of the diseases of all domestic animals, to repair and renew this weakest link with a program of research in diseases of horses that will be beneficial to both animals and man.

s/John D. Gadd, Chairman

J. L. HOPPING H. B. TREMAN GEO. E. VAN TUYL J. E. WEINMAN

Diseases of Small Animals

With the entry of this country into the war, food animals became of paramount importance. Until Dogs For Defense, Inc., the procurement agency for war dogs, was organized, the general public had little knowledge of the contribution dogs could make in the war effort. Now, we are learning of the excellent services dogs are performing as rescueworkers, guards, and liaison messengers on farfung fighting fronts, as patrol dogs for the Coast Guard, and as aides to nightwatchmen in war factories. Dogs in military service have been the subjects of countless magazine stories and newspaper reports.

As an experimental animal, the dog is rendering a service of far-reaching importance as, for example, in the determination of the toxicity of new drugs for the treatment of war-related diseases.

Tropical parasites are proving a serious menace to man and animals. Filariasis of man is of increasing importance, as some of our servicemen are being infested. Veterinarians in many areas of the United States are familiar with filariasis (heart worms) of dogs. Their accumulated knowledge of this disease is proving valuable in research designed to effectively control and treat filariasis of man, and for these studies many filaria-positive animals have been made available.

The veterinarian, too, is contributing his share. He is examining dogs for fitness to serve in the K9 Corps of the Army, and in many places the once strictly small animal practitioner is devoting part of his time to farm animals, inspection of food, and dairy sanitation. Practicing veterinarians are providing the medical and surgical care for hundreds of dogs used by the Coast Guard for patrolling the vast shores of our country. Veterinarians are assisting the American Red Cross in returning home many pet animals which arrive with troops at ports of embarkation, for these pets are not permitted to accompany servicemen overseas. The last memory of many men, therefore, before leaving for parts unknown may be of "just a mutt."

The influence of the small animal practitioner on public opinion must not be lost sight of during the war and in the postwar program of the profession. In respect to public relations, we call your attention to an effective statement by Dean I. E. Newsom who said, "They [the small animal hospitals] do more than any other agency to fire the imagination of the youth and convince him of the high standards of the profession." Thus, the small animal hospital serves as a beacon, directing public attention to the profession.

The Committee has given consideration to several problems of major importance. These are para-

sitisms, the importation of foreign diseases and parasites, and small animal research.

PARASITISM

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le lIt may be appropriate to reëxamine our knowledge concerning parasitisms in dogs. Are the present available methods satisfactory for the control and eradication of internal and external parasites? What preventive measures are being employed to prevent infestation with parasites not common to our country? It may be timely that steps be taken to perfect methods for the control of parasites affecting small animals. In the swine industry, the McLean County system has proved its merit. The veterinary profession should assume the leadership in the development and formulation of practical plans for parasite control in dog-breeding kennels. When developed and proved, such plans should be made available to veterinarians and dog breeders. In such an effort, the coöperation of other agencies which have a direct interest should be enlisted. Such a program would make possible the breeding of a better quality of pet animal.

IMPORTATION OF FOREIGN DISEASES AND PARASITES

The introduction of foreign parasites and diseases is a matter to be given serious consideration. Already, dogs of the K9 Corps and soldiers' pets have been brought back from foreign countries where there exist endemic and enzoötic diseases and parasites unknown to this country. The Mediterranean and South Pacific areas abound in diseases and parasites known to most of us only through textbooks.

It is the opinion of the Committee that dogs of the K9 Corps and pets coming in with returning troops may serve as carriers of parasites and diseases. The rapidity with which new canine diseases and parasites may spread is well known to small animal practitioners, for example, filaria, the brown dog tick, and leptospirosis. If barriers are not set up against the introduction of diseases and parasites which are unknown at present in this country, serious consequences may result, not only to the pet animal industry but also to the livestock industry and public health.

It would seem in order, as part of this report, to discuss briefly some of the diseases prevalent in foreign theaters of war that might be introduced into this country by dogs and other pets.

Surra.—This trypanasome disease of animals occurs in Western India, Iran, the Malayan Peninsula, Philippine Islands, Java, Sumatra, North Africa, upper Burma and Assam. Dogs and other pets may be carriers of Trypanasome evansi, the cause of surra, and communicate the disease to livestock through the medium of biting insects and flies. Mohler and Thompson have shown by experiments that surra trypanasomes may be transmitted by American flies. According to Lingard, carnivera may become infected by the ingestion of blood from surra-affected animals, or meat from animals dead of the disease. Animals that have recovered from surra may harbor the infective organisms in their blood for years.

Leishmaniasis or Kala Azar.—This is a trypanasome disease of man that also occurs in the dog. It is a protozoan disease, commonly called "Dumdum fever" in man, and is caused by Leishmania donovani. The parasites in the dog cannot be distinguished from those in man. The disease has been reported in dogs from various parts of Asia, Africa, and Europe. It is transmitted to the dog by biting insects. In man, the greatest incidence of the disease is reported to be in eastern India and North China. Dogs along the Mediterranean coast leng have been under suspicion as reservoirs of the infection

Oroya Fever (bartonelliasis, verruga peruana, also known as Carrion's disease).—This is another disease of human beings for which the dog and certain animals seem to be likely reservoirs. The causative agent in this disease is Bartonella bacilliformis, a rickettsia-like microërganism. The disease is more or less endemic in the valleys of the
Andes, Peru, Ecuador and Colombia, and largely
prevails in those areas between January and April.
This organism is transmitted by biting insects, particularly sand files, and may be contracted by man
from contaminated water, or from asymptomatic
carriers of which dogs and certain other animals,
together with monkeys, are likely reservoirs.

In addition to the previously mentioned diseases, dogs and pets such as cats, monkeys, and wild birds, may be responsible for bringing into the United States rables, piroplasmosis, leptospirosis, distomiasis, ratbite fever, Dengue fever, encephalomyelitis, psittacosis, bird malaria, equine encephalomyelitis, and harmful external and internal parasites. All these would constitute additional hazards to human and animal health.

Under normal peacetime conditions, the regulations of the Bureau of Animal Industry are a safeguard against invasion of foreign diseases and parasites, but under the exigencies of war the enforcement of such regulations is beset with difficulties. Troops, entering at domestic ports and by airplane, accompanied by dogs and other pets, are examples of problems confronting regulatory agencies.

Dr. R. A. Hendershott, secretary of the United States Live Stock Sanitary Association, to whom the Committee is indebted for much of the information contained in this report, has already called the attention of the Army, Army Air Corps, Navy, and the Bureau of Animal Industry to the danger of importing dogs, other pets and animals. At the time this report was prepared, an order had been issued by Brig. Gen. R. A. Kelser of the Veterinary Corps, U. S. Army, prohibiting the transportation of dogs or other pets to the United States on army airplanes.

In a communication from Rear Admiral L. Sheldon, Jr., U. S. Navy, to Dr. Hendershott, the United States Live Stock Sanitary Association was informed that a joint conference of the Bureau of Apimal Industry, Foreign Quarantine Division of the United States Public Health Service, and representatives of the Army and Navy, was being planned for the formulation of definite policies to be followed in the matter of import regulations for pets.

The Committee wishes it understood that it is cognizant of, and sympathizes with, the sentimental desires of servicemen to bring back pets, and the desires of civilians to have returned to them dogs donated for military service, but, at the same time, the Committee must recognize the grave dangers involved if the strictest measures of control against entry of foreign diseases and parasites are not established. We believe that, because the present distribution of foreign diseases and parasites cannot be accurately determined during the war, and because in many instances there are no diagnostic tests or other means of detecting carriers, it would be impossible to furnish the required certificates of freedom from disease at the point of origin.

It is, therefore, recommended that dogs, pets, and other animals originating in, or passing through, foreign areas involved in the operations of this global war be prohibited from entry to the United States for the duration of the war and for such period of time thereafter as may be required to establish effective peacetime controls. It is hoped that prompt action will be taken by the Association on this recommendation.

SMALL ANIMAL RESEARCH

There is lamentable neglect of research for the benefit of the dog. Medical centers and the pharmaceutical, biological, and food-producing industries have contributed to some extent to the scientific knowledge of diseases of small animals. The research programs of experiment stations are based on the needs of the livestock industry. Because of the close relationship of veterinary science to agriculture and the livestock industry, the small animal departments of our veterinary colleges have been unable to obtain sufficient funds for their programs of instruction and research. Farm blocs in state legislatures are chiefly concerned with the welfare of the agricultural and livestock industries of their states. Naturally, the major portion of the appropriations for the maintenance of our veterinary colleges is directed toward developments for the protection of the livestock industry, and dogs and other pets are not regarded as livestock.

It is the opinion of this Committee that insufficient effort has been made to show the overall tax contribution made by the pet-owning public. Urban dwellers who are pet owners are not organized as are livestock owners; as a consequence, their interests as pet owners are not recognized in our legislatures when appropriations are made. Many hundreds of thousands of dollars are collected annually in dog-license taxes. After costs of administration are deducted, the balance of these funds usually reaches the general funds of the state, county, and municipal governments. It would seem fair that some portion of dog-tax funds be allocated for pet animal welfare, research, and education and, in addition, that more funds be provided in the budgets of our veterinary colleges for these purposes.

It is recommended* that the Committee be continued and undertake:

 The development of a plan for improved sanitation, especially related to parasite control in dogbreeding kennels.

2) A study of the feasibility of unifying the various interests for the purpose of developing a plan which will mold public opinion, and eventually provide the funds necessary for research and education in small animal medicine.

S/A. R. THEOBALD, Chairman
D. A. EASTMAN
E. C. JONES
S. W. HAIGLER
M. L. MORRIS

*The original recommendation submitted by the Committee called for the appointment of two special committees to carry on the studies mentioned in (1) and (2) above. The Executive Board recommended and the House of Representatives voted that the Special Committee on Small Animals undertake the studies in question.

Diseases of Wild Animals in Captivity

The Committee has considered the diseases of wild animals in relationship to (a) economic and educational importance of wild animals; (b) diseases of domestic animals; (c) diseases of human beings; and (d) the veterinary profession's part in controlling them. The resulting comments are:

1) In several groups of mammals and large birds, a greater practical economic loss is incurred than the beneficial value attained as a result of their existence in many localities. Exception may be noted in the instances of valuable fur animals such as muskrats and beavers. Even these may be termed pests when over numerous.

2) Ostensively, the chief value of wild life is for recreational purposes. Modern limitations on hunting with restricted open seasons, and high license fees applying in some states to the hunters' own premises, and unreasonable protection to many forms which have become pests, make the recreational feature of questionable importance.

3) The situation has resolved itself largely into one in which only certain classes of people with

abundance of leisure and money may avail themselves of the sport of hunting. The nongame species, spoken of as the song and insectivorous birds and the specimens in zoölogical gardens which have received the least consideration, are often the most valuable in our economic welfare as they serve the purpose of mankind generally without discrimination.

4) The high monetary, educational, and recreational values placed on many specimens in zoölogical gardens calls for more complete study of their aliments in these institutions. The more liberal employment of veterinarians on the administrative and maintenance staffs is urged as a matter of economy and efficiency of operation.

5) There is no public organization in a position to support adequate, widespread research on diseases of wildlife essentially for the benefit of wildlife. Therefore, it is incumbent upon the responsible organizations charged with the conduct of rerearch on diseases of domestic livestock, and diseases of human beings to assume the leadership in studies of disease of wildlife transmissible to these groups.

 Recent findings indicate that increasing numbers of wild species serve as reservoirs of infections transmissible to domestic livestock and human beings.

7) The United States Department of Agriculture has annually spent large sums of tax money to eradicate brucellosis in domestic cattle, while the United States Department of the Interior has also spent large sums of tax money each year to maintain a reservoir of this disease in national parks and game preserves. Diseased buffalo from these preserves are moved indiscriminately across the country without regard to sanitary laws governing the transportation of diseased animals and without regard to the possible spread of brucellosis into clean areas.

8) Publication of the results of research on diseases of wild animals is scattered in a variety of scientific journals, some of which have an exceedingly limited distribution. Consequently, much of the work in this field is of little help to the present investigation due to the fact that it is buried in obsolete journals or is not available to the average scientific library.

9) (a) The inter-relationship of diseases of wildlife to those of domestic livestock and man requires that all branches receive collateral study.

(b) It is evident that much valuable information on disease conditions in wild species is hidden.

(c) The elucidation of these obscure conditions would help make complete our comprehension of pathology in its various phases.

The Committee makes the following recommendations:

1) That the American Veterinary Medical Association use its influence to the end that research on diseases of wild animals be intensified and carried out by responsible organizations where competent professional supervision, staffs, facilities, and libraries are available for complete and systematic studies over long periods.

 That the JOURNAL of the Association endeavor to publish more original articles and abstracts of work dealing with the diseases of wild animals.

 That veterinarians be urged to secure more knowledge of the diseases of wildlife and be aware of the inter-relationship between diseases of domestic animals, wild animals, and man.

4) That the Committee be continued.

5) That the Committee be known as the "Committee on the Diseases of Wild Animals" rather than the "Committee on the Diseases of Wild Animals in Captivity."

s/Leonard J. Goss, Chairman J. E. Shillinger Frank D. McKenner

Motion Picture Library

Your committee has endeavored to accumulate data on the desirability and the practicability of establishing and maintaining an association motion picture library. There seems to be little doubt that motion pictures could play an important rôle in the advancement of veterinary medicine, particularly if a correlated program were developed and handled through a centrol agency. It appears from our investigations that the Association is the logical agency to act as a clearing house and that it would be neglecting a most desirable and progressive step if it failed to undertake such a program.

The Committee finds that motion pictures are extremely popular and that there is an increasing interest in their use for meetings and instructional purposes. There is a unanimous feeling that the Association should maintain such a library and, in the event one is established, it is certain that the state associations and other groups, including the United States Livestock Sanitary Association, U. S. Army Veterinary Corigs, and veterinary colleges would use its services.

Replies to questionnaires sent to veterinary colleges, state associations, and others, reflected a great enthusiasm for such a project. The American Medical Association and American Dental Association maintain motion picture libraries for both professional and lay use.

STATE ASSOCIATIONS

Representatives of 34 state associations replied to the Committee's inquiry. Of these, 32 have used motion pictures at meetings. All but one stated that members have been interested in the motion pictures presented. Opinion was unanimous that the AVMA should maintain a library of motion pictures, and all except one said they would use its services and pay a rental fee to help defray expenses.

The subjects shown and their frequency at state association meetings are as follows:

General Large										*						2
Small	anim	als			4											2:
Surgery	and	obs	te	t	ri	C	9.		۰				9			2
Poultry																13
Sanitary																
Research																1:

The sources of pictures shown at these meetings were:

U. S.	Depar	tm	en	t	(of		A	g	T	i	cı	ul	lt	u	r	e				19
Other	Feder	al	A	g	eı	nc	У														5
Comm	ercial	fir	m	_																	25
	nal pro																				
	source																				9

Twenty-five replied "yes" and four "no" to the question: "Do you believe your association would be interested in obtaining motion pictures from the AVMA for showing to non-veterinary groups in your state if proper subjects were available?" Sixteen indicated that members of their associations have equipment for taking motion pictures.

Supplementing the information obtained from state associations, a poll was made at the California Veterinary Medical Association conference in January, 1944. Of fifty-seven veterinarians interviewed, all said the motion pictures shown at veterinary meetings are of interest and worth while, and 56 said their use was desirable at such meetings. The following table shows the subjects and frequency of interest in each as expressed by those interviewed:

	practice animals													47
Small	animals													33
Surgery	and obst	e	tr	i	C	9.								48

Poultry .																													27
Sanitary	1	8	c	l	e	n	10	æ	•	8	L	n	đ	f	o	0	d	l	ŀ	13	71	g	le	ı	16				28
Research																													31

Fifty-six members said the AVMA should maintain a library. Fifty-two believed the California association should obtain motion pictures from the AVMA for showing to non-veterinary groups if proper subjects were available, and three were opposed to this proposition. Sixteen of those in attendance have equipment for taking motion pictures.

No attempt was made to contact sectional veterinary associations or those below the state level; however, from inquiries received, it is evident that these groups are very much interested in motion pictures pertaining to veterinary medicine.

VETERINARY COLLEGES

In order to determine the status of motion pictures in veterinary colleges, questionnaires were sent to the deans of the twelve recognized schools in the United States and Canada. All but one (Texas) responded. The information is summarized as follows:

The eleven schools reporting use motion pictures to varying extents for instructional purposes. Three use films regularly and six occasionally. In addition, motion pictures are used by most of the colleges in connection with visiting lecturers or as special features. The subjects shown and their frequency are as follows:

			-										
General Large	practic												8
	animal												7
Surgery													9
Poultry													4
Sanitary	scienc	e an	d 1	00	d	h	У	çi	eı	ne			5
Research	h												4
The source	es were	as	fol	lo	WS	:							
Library													4
Persona													5
Commer	cial fir	n										0	9
Governn	nental a	agend	cy										9
Other so	ource .												3

All stated that students react favorably to motion pictures used for instruction. Ten of the deans expressed the opinion that the AVMA should maintain a library of motion pictures relating to veterinary subjects. All believed that their schools would use the services of such a library and would be willing to pay a nominal rental fee to help defray expenses. Nine colleges or members of the faculties possessed equipment for taking motion pictures. Four maintain limited motion pictures libraries, and seven do not. Of the four having libraries, three loan films to other veterinary colleges, legitimate groups or associations, and through exchange. The eleven veterinary colleges reported that they would cooperate with the Association in taking pictures for its library if suitable arrangements for furnishing film could be made.

Summarizing the comments of the deans, the colleges are interested in motion pictures and their use for instructional purposes. They favor the maintaining of a library by the Association, and agree to use its services and to assist in making new pictures. At present, the extent of use and the number of motion pictures made by the schools have largely been determined by the interest in the subject by faculty members and by students who have made it a hobby.

It appears that more and better pictures will be made and that their use will be extended in veterinary schools. This activity and interest could be greatly stimulated by an association project in this field.

TITLES AND SOURCES OF MOTION PICTURES

The Committee inquired into the sources and titles of available motion pictures on veterinary

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subjects and, fortunately, learned of the work of Miss Florence Harden, formerly librarian of the Veterinary School, University of Pennsylvania, who for some years, has made a special study of motion pictures relating to veterinary medicine. Miss Harden has accumulated a large amount of data, including titles, sources, evaluation, methods of cataloguing and circulation, and procedures in compiling an index.

Her list comprises approximately 500 films of interest to veterinarians. Of these, about 175 are catalogued under veterinary medicine, 265 under general medicine and the remainder under animals (popular). In preparing this list, information has been received from many sources, including veterinarians who have sent information about pictures received the process of the process of

seen at meetings or that they own personally.

Miss Harden kindly offered to place her data at the disposal of the committee and, through arrangements with the Board of Governors, funds have been provided to cover the cost of transcribing the material. This information is much more complete than the Committee could otherwise obtain with the time and sources available. It will be placed on file in the AVMA office for reference and use.

LIBRARY SHOULD BE ESTABLISHED

In common with most activities, the war has disrupted the production of motion plcture material and equipment, and peacetime standards of workmanship have not been maintained. While this situation will curtail to some extent the development of a library on the scale that appears desirable, it should not preclude the setting up of such a program by the Association. Priorities and other restrictions will have to be dealt with, but considerable ground work can be laid even though operations be on a limited scale for the duration.

operations be on a limited scale for the duration. It is the consensus of the Committee that the Association should establish a motion picture library without delay. The establishment of a library should be authorized so that the work of assembling motion pictures and arranging for their distribution, as well as correlating efforts in their production, can proceed.

The Association is the logical agency to act as a clearing house for motion pictures of interest and value to the profession. Such a program should not prove only of immense value to the student and the practicing veterinarian, but should play an important part in enlightening the public generally on the scope, accomplishments, and importance of veterinary medicine and the veterinary service.

Indications are that the Association could procure, without cost, originals and prints of many films on veterinary subjects. Many others could be obtained at cost, while a number of new pictures could be made at the cost of the films and duplication only. There is real need for additional motion pictures on veterinary subjects. The means for their procurement would be greatly enhanced by furnishing film to veterinary colleges and to individuals having cameras and who are willing to cooperate in this project.

Films should be loaned on a rental basis. This would help to defray routine costs of operating the film library. The Committee, however, feels that this and other details can better be worked out after it is determined if a library is to be established.

The Association, through its motion picture committee, could provide a consultation service for those producing films on veterinary subjects, help to avoid duplication of subject matter, and to correlate the activities of the various individuals and agencies in this field.

A small supply of film could be kept in reserve by the Association for use in cases of exceptional interest to the profession. Pictures of new and important diseases and techniques could be made through the coöperation of the veterinarians throughout the country who have motion picture If the establishment of a film library is approved, it is believed that future committees should work closely with other committees, specially those on Education and Public Relations. The Committee has not attempted to include in this report technical details pertaining to the operation of a film library. A considerable amount of literature on the general subject is available, new material is being added, and we are accumulating data for the use of the Association.

The Committee wishes to express its appreciation to Miss Florence Harden for her valued assistance and coöperation in supplying pertinent informa-

RECOM MENDATIONS

The Committee makes the following recommenda-

- That a special committee on motion picture library be continued.
- 2) That the establishment of a motion picture library be approved and that funds be provided for the purpose of defraying expenses incidental to starting such a library in accordance with a program to be worked out by the incoming committee.*
- 3) That arrangements be made by the central office for necessary servicing and storage of films by a commercial film service for the time being. (This can be done at a nominal cost.)
- 4) That the clerical work involved in operation of the film library be done by the executive secretary's office.

's office.

s/A. G. BOYD, Chairman

A. G. DANKS E. C. KHUEN

W. C. GLENNEY CHAS. B. KRONE

*The original wording submitted by the Committee was as follows: "2) That the establishment of a motion picture library be approved and that funds in the amount of \$1,800 be included in the current budget for the purpose of defraying expenses incidental to starting such a library in accordance with a program to be worked out by the incoming committee."

The original report also contained a fifth recommendation as follows, which was deleted by the Executive Board and House of Representatives:

"5) That part of the funds provided for the library shall be used to purchase film to be made available, without cost, to veterinarians and veterinary schools for making new pictures as may be approved by the Committee after consultation with other appropriate committees; also, that part of the funds be used to purchase prints of desirable films approved by the Committee."

Postwar Planning

The type of work attempted by this committee was new to most of its members. Technics with which we were not generally acquainted had to be used. Exploration of certain fields has been made by means of questionnaires (see end of report). Responses in general would indicate that a goodly number of veterinarians are giving serious thought to the problems confronting us.

In the studies here reported, the numbers in the tables should be considered as representing proportions and not individual replies, since in most cases the reports represent summaries of opinion. Interpretation from this viewpoint will give great significance to the results.

VETERINARY LABORATORY TECHNICIANS

There seems to be a demand for veterinary laboratory technicians. To measure that demand, questionnaires were sent to a selected group of small animal practitioners; also questions were included in a survey conducted by the American Animal Hospital Association and in the general questionnaire sent to various state committees and state secretaries. The replies are tabulated below.

USE OF VETERINARY LABORATORY TECHNICIANS

Now	After war	Both now and after the war
Selected group (32*) 3	13	10
A.A.H.A. (67*)31	58	-

TYPE OF TRAINING PREFERRED BY EMPLOYER

Com-

mercial Vet. Tech. Both

Selected group (32*) State questionnaire (16*)		5	13	8
YEARS OF COLLEGE	TRAIN	ING SUG	GESTER	
	1 year	2 years	3 years	4 years
Selected group (32*) State questionnaire (16*)		16	2	3

From study of the tables, one sees that there is considerable demand for technicians both now and after the war. The majority of those interested prefer technicians with training in veterinary medical technology. Some prefer technicians with only commercial training, while a slightly larger number favor both commercial and technical medical (veterinary) training. A majority suggested that such technicians should have a minimum of two years college training. There was a small group, not shown in the tables, who favored apprenticeship training of technicians. For those who may be interested in the scale of salaries received by those with similar training in human medicine, they may refer to A. B. Mills' "X-ray and Laboratory Technicians. A National Study of Salaries' [Modern Hospital, 57 (Nov. 1943):51-52], and F. Wm. Sunderman's "Opportunities and Responsibilities in Medical Technology" (Am. J. M. Tech., 8:130-135).

POSTWAR COLLEGE PLANS

*Number of replies.

A survey of the 12 recognized veterinary colleges brought responses from only six. All six schools have decided to give refresher courses or are considering them. The suggested length of these courses is from two weeks to two months. The allocation of time for lectures, demonstrations or laboratory exercises has not been decided on. The schools expect to be able to handle twenty-five or twenty students, or less, at a time. Three state that the courses will be repeated if desired.

Generally, the schools want to give the men what they want. Some attention should also be given to what they need. One school thought that there would not be a large number seeking admittance at the same time, and that no two men would want exactly the same thing. Their idea was to let each man choose what he wanted and then try to take care of him. Of 25 replies from veterinary experiment stations, 17 reported postwar expansion of research, 3 none, and 5 possibly some. Ten offer graduate work, and 10 indicated they could give refresher courses.

In general, postwar college plans apparently do not differ radically one from the other. One school is thinking of adding another year of preveterinary work. Slight changes or additions of courses in food hygiene, poultry, pathology, x-ray and parasitology have been made or are expected. One reply suggests that the course is being studied for changes. Most of the schools are not planning any great increase in the teaching staff. Two or three hope for some increases.

There are relatively few positions at any of the schools which enable men to pursue graduate work. Four schools report a total of 22 positions enabling

men to pursue graduate work. Four schools expect increases in this field. One school has funds for a postwar project which will include some graduate work.

EXTENSION OF USEFULNESS OF THE VETERINARY PROFESSION

A survey of ideas on the extension of usefulness of the veterinary profession reveals mainly two general groupings. The first may be termed "Educating the Public." Under this heading the following grouping may be made.

Educating Public—5
Extension—3
Extension veterinarian—2
Radio programs—3
Smith-Hughes teachers—2
Newspapers—2
Talks before civic organizations—1

Excerpts from replies indicate something of the thinking in this regard:

"Younger men with more modern training" (2).
"Improved methods of advertising." "Seek to have advertisers such as Swift and Company, American Meat Institute, American Dairy Association, Metropolitan Life Ins. Co., National Dairy Products, include mention in popular magazines as they do with physicians." "Educational facilities for training qualified veterinarians." "Teaching of sanitary inspection leading to a degree in public health."

"A few stories telling about the veterinary profession, telling about how they take care of the health of the war dogs, inspect meat for soldiers, go into battle to evacuate horses and mules that have been injured, and present to the public eye facts of which they are ignorant. Yes, we have romance in our profession, but we have been too lazy to take advantage of it. There is nothing that is wrong with the ethics of education. May I note that we like to write about our grievances in our own journals but never do anything to alleviate them."

A viewpoint from the field of human medicine is quoted (Daylson, W. C.: Readjustments of Returning Medical Officers. J.A.M.A., 124, (1944): 817).

"Better medical care can be obtained for a smaller amount of money spent in teaching the public to utilize medical facilities than would be required for subsidizing physicians to go to the areas in which they are needed. The law of supply and demand is still in operation. The public gets the product it demands whether it is medical care or a nationally advertised variety of tooth paste. However, the demand in many of these communities must be created. The American Medical Association, American Academy of Pediatrics, and county, state, and federal health services might employ publicity experts to conduct national, state, county, and city advertising campaigns in newspapers, buses, biliboards, and radio through churches, schools, the Parent-Teachers' Association, the American Legion, and other organizations on the necessity of medical care."

In passing, especially worthy of mention is the program of advertising by the Associated Serum Producers, Inc., and the radio programs sponsored by our veterinary medical associations.

The second group concerns "Public Health."

Public Health—2

Municipal meat inspection—5

Municipal milk inspection—3

Municipal dairy inspection—4

Ideas expressed by various individuals are: "Having state veterinarian." "Pathological laboratories." "Subsidizing veterinarians for sparsely settled country" (5). "Restriction of sales in use of biologics to licensed veterinarians" (2). "More time to prevention of animal diseases." Increased numbers of veterinarians were suggested by five,

one stating: "Increased number of veterinarians will make the laity veterinary conscious and increase veterinary calls and income."

DEVELOPMENT OF VARIOUS ACTIVITIES

The replies showed 10 favoring and 2 not favoring the group of activities.

Artificial insemination was indicated as a possibility of development by 10, while 4 did not see possibility of development. Variously expressed

"Unable to maintain veterinarians in artificial insemination work. After a year or two in this field they change to other activities. The work now handled by laymen."

now handled by laymen."
"Artificial insemination is growing fast, but the work is now being done wholly by technicians."

"Artificial insemination is largely handled by laymen. Veterinarians here, at the beginning, were offered the opportunity and several tried it, but the compensation was too inadequate to continue. A way should be worked out to keep this work in the profession."

"This phase (artificial insemination) of work is purely a veterinary problem, but difficulties with laity are soon to be encountered." The problem of artificial insemination is an im-

The problem of artificial insemination is an important one. Three members (J.A.B., W.R., H.L.F.) of your committee agree on the following statement in regard to this activity:

"We believe that it is generally recognized that artificial insemination has many advantages, some of which are the introduction of new blood lines in herds far removed from the home of the male and the siring of many more calves during the life of the male than by ordinary mating. Certain other economies and advantages are obtainable which undoubtedly will be more generally recognized and appreciated as the practice of this procedure continues over a longer period of time. This being the case, it only remains for us to determine, if possible, the attitude which the veterinarians can conservatively take and maintain in this vast undertaking.

"At points in the various parts of the country, the semen from desirable bulls may be purchased by veterinarians and shipped for considerable distances. Some veterinarians employ this manner of securing semen; others employ it only partially and in addition use semen from bulls which they own or from bulls which they have leased for this purpose.

"It seems to be the rule that when insemination work is begun in a community the demand for this service increases and continues to increase, depending largely upon the availability and quality of the service. Mass insemination work is not only a possibility but more a probability in localities where the cattle population is large. From this, it is easily understandable why the formation of a breeding association to handle artificial insemination work is frequently undertaken. This may have undesirable repercussions to the veterinary profession and we think also to the welfare of the cattle industry.

"The nature of this undertaking does not lend itself well to greatly increased volume without a corresponding increase in the service of skilled technicians and veterinarians. Inseminative work is too closely associated with breeding troubles to remove the veterinarian from the picture. It is logical and practicable that technicians be used for the sterilization of equipment, etc.

"If the insemination work should be increased beyond the ability of the available veterinarians to care for it, which might be the case where breeding associations are handling the project, then it is only reasonable to presume that so-called 'technicians' would be substituted for veterinarians and be expected to attend to the numerous phases of breeding troubles. Thus, the breeding associa-

tion in time might become nothing less than a short cut to veterinary practice.

"In most states there would be no legal barrier to persons thus acquiring experience doing veterinary practice among the cattle of the memberowners of such an association.

"This committee is already in possession of suggestions from lay people that so-called 'technicians' assist veterinarians in the testing of cattle for Bang's disease and tuberculosis. Conceivably, such services as could be performed in a measure by lay people or technicians would be supplied, for obvious reasons, at less cost than a veterinarian would be compelled to charge for his services. Thus in time, technicians might be available at such a low cost that the profession of veterinary medicine would be made unattractive to those who desired to become professional men.

"For the time being, at least, it would seem that the work of artificial insemination could best be limited to the amount which the veterinarian can handle in his practice with the aid of technicians available to him. Otherwise, we feel that the growth and development of the project under the control of breeding associations could be such that eventually it might operate to the detriment of the owners concerned and which it is set up to serve.

"We suggest, therefore, that veterinarians encourage the increase of insemination work, only to the extent that it can be done under their guidance and direction; otherwise, we feel that it may mushroom and get beyond the limits of rational control."

The responsibility of the veterinarian to the problem of artificial insemination should, however, be given serious consideration, since it has been estimated that each veterinarian employed in certain artificial insemination projects actually makes possible an increase of 1,000,000 pounds of milk annually, simply in terms of the output of the cows which have replaced the approximately 3,000 bulls formerly required in the herds making up breed associations. Further, the improvement in productive ability of offspring of superior sires may approximate 15 to 20 per cent more milk and butter fat than their dams.*

Poultry practice was considered by 9 as a possibility for development, while 2 did not so think. The statements, "The establishment of more effective poultry disease control programs would make veterinarians' services more valuable," and "Laws controlling fakers and peddlers would make possible the getting of more business," give two approaches to the problem other than those related to individual initiative.

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Meat inspection and dairy inspection were each thought by 9 groups to have possibilities of increase. A very pertinent statement was given on one response, "The physical examination of dairy herds is required by law in ——," It is suggested that this receive attention of the Committee (Postwar Planning) since in other parts of the country it is neglected and there is fear for the bad effect this fact may have upon its status in that state.

One of the problems associated with meat and dairy inspection is the securing of personnel. A suggestion to meet this came in one of the replies:

"The federal and state departments of health and animal industry need well trained men. The AVMA or U. S. Live Stock Sanitary Association might sponsor internships, giving the students special training in the field of their choice."

To meet a similar situation in the Province of Ontario: "The federal department is considering this problem and plans to set up a form of scholarship so that returned men of good education in primary schools could be induced to enter the

*Dean C. L. Christensen, College of Agriculture, Madison, Wisc.: What Basic Understanding Must We Have of Postwar Agriculture." Address, April 8, 1943.

Veterinary College and be trained for civil service positions with the proviso that they immediately enter the federal service on graduation and stay for at least a five-year period in order to pay back to the Government their tuition."

District pathologic offices were thought by 6 to be possible developments, while there was one nega-

tive response to this activity.

In practically all of these activities, nothing was being done to further this development. One report stated that in one state there were "200 livestock auction sales without supervision."

VETERINARIANS IN ARMY SERVICE

Since there were responses from only 24 states on the number of veterinarians in military service, the data will be considered as representative of the country as a whole, rather than being reported according to states. The minimum number from any one state reporting was 2; the maximum was 160; the average was 35; the total for the 24 states was 854.

Responses in regard to the expectation on returning to civil practice varies from 100 per cent to a small percentage. In many cases, no estimate was given. In 7 cases, provisions were being made for the returning veterinarians, and in 12 no plans had been made. Pertinent suggestions of problems and possible solutions from replies follow:

& A Service and district associations are making their services available to returning veteri-

narians."

"Problems confronting these men: Loss of various things—in practical experience, technical knowledge, new clinical developments, knowledge regarding new drugs, and desire to engage in general practice. This association has always been interested in advancing veterinary service, fellowship, and cooperation between members of the profession."

"Needs: (1) Refreshing their general knowledge of the sciences of veterinary medicine. (2) Financial. (3) Locations and jobs. (4) Possibly instru-ments, automobiles, and other supplies.

"Postgraduate courses at Government expense might solve problem (2). An interlocking clearing house system operated by the AVMA and state associations or AVMA and state livestock sanitary officials which would collect, compile, and dissemi-nate information concerning locations for practice, jobs, etc.; also state and federal postwar rehabilitation plans should be constantly followed for opportunities to create additional jobs-e.g., extension of milk and meat inspection for small towns (Problem 3).

"This association will make an effort to see that these men are properly placed, not with the idea of making or producing competition, but giving opportunity to locate and develop practice in proper

ethical manner."

"Veterinarians returning to establish practices will find openings there no matter how many veterinarians have practiced in that location during their absence. For others, refresher courses, and for still others, old practitioners will be glad to absorb many. This association extends a glad hand of fellowship to all newcomers and is holding regular monthly meetings replete with the experience of practicing veterinarians which is available to all newcomers.

"In packing houses using lay inspectors—replace them with veterinarians. For men in service just out of school, it is up to them to find a location just as any other man just graduated, or as men did after World War I."

GROUP PRACTICES

There were 6 replies favorable to group practices and 11 unfavorable. Comments were not significant.

LAY ASSISTANTS

Nine replies favored lay assistants and 2 were opposed. Minimum training for assistants was given as high school (1); care of animals (4); apprenticeship (4). In one instance an apprentice-Minimum training for assistants was ship of 5 to 10 years was suggested.

were as follows:

"Veterinarians in the city employ veterinarians as assistants." "There is a need for such work-ers (lay assistants or trained technicians) but will probably involve some reorganization of present systems of practice." "Entirely dependent upon the amendments to the Veterinary Practice Act and its enforcement." "Would be very cautious of releasing many semitrained persons." "There may be a limited field for a few laboratory technicians. "This class of work tends to abuses, such as their employment in actual practice, which is already the case." "Danger of quackery." "Interns as assistants possibly better than lay assistants." "Training livestock owners or future farmers

through suitable courses in animal sanitation and hygiene in college is more important and practical. Short courses under veterinary supervision could be offered during the slack periods of the agri-cultural year. By this means, we could teach our clients to recognize an infectious or contagious disease and the importance of correct diagnosis and treatment, thus probably showing them the value of adequate veterinary service and of veterinary laboratories. This could go a long way in abolish-This could go a long way in abolish-

ing quackery."

used graduates, students, and lay assistants." ants would lend itself to the creation of numerous

quacks."

These comments would indicate that in various sections of the country local conditions probably would govern the need for lay assistants and the advisability of using them.

POSTWAR CHANGES IN ANIMAL POPULATION

There were 14 replies which anticipated no change, 10 which foresaw an increase, and 5, a decrease. There was expected an "increase in swine and dairy production" in several areas.

In view of the proportion of the national income from livestock and livestock products and of the dependence of a great share of veterinary practice upon farm livestock, serious study of both national and local trends in this industry should be made in planning for equitable distribution of veterinary service.

INDUSTRIAL AND AGRICULTURAL TRENDS

Of replies to a question in this phase of our survey for the field of agriculture, 3 anticipated no change, while 14 thought there would be an upward trend, and only 1 foresaw a downward trend. For industrial trends, 3 foresaw no change, an upward and 2 a downward trend.

A significant comment was "a gradual increase in industrial trends. Along with this will likely be a more discriminating clientele with the capable and capable-appearing veterinarian commanding good fees. The less capable and less presentable

one having harder going."

With the possible changes in industry incident to a shift from wartime to peacetime production and the shifting of the population either to other localities or to other interests in their wartime employment communities and the return of many from military service, both industry and agriculture in a community may be considerably affected. The incomes of both the industrial and the agricultural workers may be seriously changed. The impact of such changes may directly affect the type of veterinary service a community may support.

COMMUNITY VETERINARY PATHOLOGIST

To regional groups of veterinarians the possibili-ties of the services of a community pathologist were put. Three groups favored the plan and one group was opposed to it. Comments like the following give an idea of the attitudes of the groups surveyed.

"Fifteen veterinarians too few. Minimum of

thirty suggested."

"Every practicing veterinarian, where population warrants and where infectious diseases are an economic problem, should have convenient access to a pathological laboratory. Such a laboratory would have to be supported by more than 15, or maybe the state might assist through a subsidy."

"Yes, but if developed, should not be interfered with by commercial laboratories. Such laboratories have been tried, but due to competition from laboratories doing free work, were not a success.

USE OF HUMAN HOSPITALS

To some groups, the advisability of using local hospitals was presented. In 2 cases there was use and possibility of use being made of such labora-tory facilities. In 5 groups, no or unsatisfactory use was reported.

A comment, "Yes, in a few cases, but in general not too satisfactory or too perfunctory. The facilities not adaptable" revealed a general attitude.

VETERINARY CURRICULUMS

In only 4 cases did the responses indicate satisfaction with the adequacy of veterinary courses as

offered, and in 2 the replies were definitely no.
Of the many suggestions, the following, with the number of times each appeared in the replies, give an idea of what were considered the most glaring

deficiencies.

"More practical training in senior year" (7).
"Nutrition courses" (6). "Meat, milk, and food inspection" (4). "Business side of practice" (4).
"Biochemistry" (3). "Poultry pathology" (3).
"Animal Husbandry" (3). "6-year course" (2).

Other suggestions appearing only one time each

"Two years preveterinary work." "Report writ-g." "Added courses in English and journalism." "More work on basic sciences."

There were many comments. Those following will give an idea of the thinking of those who pre-Those following

pared the replies to the questionnaire:

"Recent graduates have no actual experience in passing stomach tube, spinal anesthesia, obtaining blood samples, T.B. testing, making udder infu-

sions, etc." "A fault in judging a man not capable of performing an operation in May, then graduating him in June as a Doctor of Veterinary Medicine." June as a Doctor of Veterinary Medicine."
ore responsibility should be given senior More responsibility students." "Sent "Senior students should be given more opportunity to actually perform operations and administer treatments during clinics." "Lack of trust in senior students." "Training in modern methods approximating those of the medical pro-fession." "Training adequate except in artificial fession." "Training adequate except in artificial insemination." "There is a lack of the knowledge of the business value of good professional appearance." "Greater discrimination in accepting students."

"In college teaching too much emphasis on serums and vaccinés and not enough on things basic to livestock health." "More emphasis should be placed on humoral pathology in contrast to tendency to overstress cellular pathology." "Might be advisable to provide more instructors for not only musteredout veterinarians but for veterinarians who desire more information regarding new developments."

"Curriculums cannot be expanded until such time as we have manpower enough to support our programs." "Most veterinary institutions are understaffed. They need more and better men.

veterinary colleges should require more "The work of their students, particularly in the last two years of college work. Medical schools drive their students to the limit of human endurance for four years. Veterinary colleges should do the same, Veterinary educators could learn much from the faculty of medical schools and in the amount of work required." "Six-year course with option of specialization in last year."

"A scholarship should be given in subjects which would tend to broaden a student's perspective of the whole veterinary profession and extend his vision beyond the immediate future. We need men of this type badly." "Adjustment of fees at public veterinary clinics. Changing attitude of veterinary extension service to promote closer cooperation with The failure on the part of the veteripractitioners. narians of the extension service to cooperate in veterinary work should be rectified."

"Teachers should have had more practical experi-

INTERNSHIPS

The tabulation below represents returns from different sources and should give an idea of the trend of thinking along this line. Nun parentheses indicate the number of replies. Numbers in Selected group (32) A.A.H.A. (67) State questionnaire (16)

BASIS FOR VETERINARY PRACTICE

There were but 2 responses to this part of the survey. Although there was fairly close correlation in some items, the number of replies was too small for making worth while deductions.

PUBIC HEALTH SERVICE

The following material on public health service was abstracted from the minutes of the Chicago meeting of the Committee (Nov. 29 to Dec. 2, 1943).

Considerable time was spent in discussing what

is the veterinarian's place in the Public Health Service program. It was brought out that the veterinarian will contribute most in this field in the sanitation of food products and epidemiology of diseases that may have animal reservoirs.

At present, the Public Health Service would like

to have 12 veterinarians who have some training in public health to assist the 12 districts into which the United States and its possessions over-

seas are divided.

One part of the sanitation program refers to restaurants and other establishments that serve prepared food. Dr. Haskell has developed a profor instruction of personnel in these fields, teaching them the fundamentals of bacteriology, sanitation, and stressing the point of what their public health responsibility is, as individuals, to the public.

This work has been most satisfactorily handled by veterinarians because they understand bacterioland the spread of diseases, and what diseases could be brought in by uninspected food products, but the regrettable part has been that there have been insufficient numbers of veterinarians to carry

on the program.

Abattoirs are being built in connection with frozen locker plants in some parts of the country. The Public Health Service has assisted in designing The question is raised: Should we develop meat-inspection service in connection with the plants. It is a very difficult thing to attempt and to do today because most practitioners are overloaded with work, but the necessity of having veterinarians in the State Health Department is borne out by this new program. Dr. Steele said, "I am very much interested in selling to the Public Health Service or making them realize the necessity of establishing a division of veterinary public health in the Sanitation Division. The Sanitation Division will be divided into three parts in the future: the sanitation engineer, the entomologist, and the veterinarian, each having his own critical resolution.

In dealing with public health personnel in the future we are going to be dealing with a higher type of man than we have in the past, inasmuch as most physicians and sanitation engineers and public health nurses are all taking advanced training. There is not one field of public health or one division of public health where the personnel in it today is not taking advanced training in the field of public health in their own special subjects and in also learning what the broad scope of public health is.

If the veterinarian is going to play an important part in that field, he must be a public health veterinarian and a specialist in public health before he can understand that entire problem. He can not be the type of man we see in many public health departments—I am now referring to the physician who is appointed as health commissioner because nobody else wants the job and he is not too successful in practice. This physician does not set up a good public health program because he is not interested in public health; it is just a job to him. We don't want that kind of men in public health because health is something that can be the basis of all prosperity in this world."

It was brought out that men with two years'

It was brought out that men with two years' experience may receive an entrance salary of 33,400. This two years' experience may be obtained in state or county or city health departments. One year of graduate work in public health schools could be applied as one year of experience. Dr. Steele said that one of the crying needs of the country is a veterinarian on the public health staff. The Public Health Service realizes the necessity of having such men on the staff. A most important place for the local veterinarian is to be a member of the Board of Public Health in his community. He can recommend to the board and advise the health commissioner on problems relating to veterinary public health. In the second place, he can act as a member of the staff of the local health department in either a fulltime or part-time capacity in supervising milk and food handling and meat sanitation regulations.

"The ideal public health unit," according to Dr. Steele, "is a population between 30,000 and 40,000, because in estimating budgets the figure often used is 75 cents per capita per year for the public health program at the minimum." A more desirable figure is \$1.00 per capita for the public health program. The thing is that the public health budgets can not be allowed to become unbalanced

or there will be severe criticism."

Lt. Steele reported that in the state of Ohio they never had many veterinarians in local county health departments. Most of the veterinarians were in the larger cities—Cincinnati, Dayton, Columbus, Akron, Cleveland, Toledo—and the men were on the average 40 years of age or over. It was pointed out that a lack of response of veterinarians to the public health program is due to it not being a part of the economic structure of the community in which they reside. They do not take to it quickly. They must be educated; it must be taken to them

ABSTRACT OF MINUTES COVERING DR. CARPENTER'S DISCUSSION ON THE POULTRY DISEASE PROBLEM

Dr. Carpenter said, "I would like to present just a glimpse of where the poultry industry stands right now with respect to its need for veterinary aid.

"This industry earned over two billion dollars in the past year.

"The industry has grown faster than our ability to husband it, from the standpoint of controlling diseases. Many veterinarians feel that they do not belong in the poultry disease control picture too intimately because of their honest feeling that 80 per cent of the success of disease control is a management job, not a medical problem. Another consideration is that frequently more birds starve to death in the presence of bacterial or virus agents than die from the agent itself. Therefore, the veterinarian must counsel with the owner and get paid for what he knows rather than for what he prescribes as medicine.

"Then we must remember that the minds of these farmers react somewhat like this: Well, now, why did I pay him \$3 for that, when I probably could get a bottle of the same thing at the hatchery for 50 cents, or at the hardware store or corner drug store; and if the veterinarian is not a pretty good salesman, that sale is not going to stick.

"In this postwar planning, we must have a sales program of veterinary practice. Anything in the world that is worth getting a fee for has to be sold, whether knowledge, or a product, or a service.

"Poultry practice has become greatly involved along with the coming of the mammoth incubators. A hatcheryman is the logical man the farmer is going to call if his chicks do not do well; that's where he bought his chicks.

"Well then, if the hatcheryman does a pretty good job of convincing the farmer that the chicks were all right, he may think, 'Maybe they are not getting adequate nutrition,' and he goes to his feed man. Both of these have their own serviceman. First of all, let's not forget what that serviceman is there for. He is there to protect the hatchery business, if he is a hatchery serviceman; to protect the feed business, if he is a feed serviceman.

"Any two billion dollar industry needs some agency to take care of its ills. If we as veter-inarians do not, the hatcheryman, the feed service-man, or someone else will.

"Now remember, too, all the time, that the leaders in the poultry industry are crying for our help. Perhaps we need a special combination college curriculum which combines poultry husbandry, genetics, nutrition, and disease control. Such graduates could be recognized as professional men—qualified to practice veterinary medicine as it pertains only to fowl.

"Such graduates would need a good course in jurisprudence, because they will have to sell their services.

"We used to talk about the hog as the mortgage lifter. Today on many of these farms poultry is paying off the mortgage and for four out of five years during the 30's, chicken meat and eggs, including turkey meat, returned 200 million dollars a year more than the combined grain crop of this country, including corn, wheat, oats, barley and rye.

"I am not meaning to be critical; but often, in the Midwest especially, the farmer is forced to go to the hatcheryman and feedman, to get aid in poultry disease problems. Now we must set machinery in motion to correct this if we want to keep poultry disease control in the hands of veterinarians. The veterinarian should be looked upon in his community as the diagnostician of poultry diseases. However, he may not be able to ask his customary fee for worming birds, administering fowl-pox vaccine, drawing blood samples, culling for health and production. Perhaps veterinarians could employ trained laymen under their supervision, and be responsible for their work.

"This plan must be acceptable to the poultry industry and to the veterinary profession. The veterinarian would be paid for his recommendation. His recommendation might be carried out by his trained layman who would take the place of a nurse in a hospital.

"Many veterinarians like to have farmers bring

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their chickens to them for diagnosis, but frequently they do not have time to make the call and charge less than their regular fee. The most important thing in controlling disease is an accurate diagnosis and it is up to us to train the veterinarian to make accurate diagnoses.

"The trained layman could see to it that, because he might be trained in husbandry more specifically than the veterinarian, the farmer does a job of cleaning up and does everything essential to good nursing in the flocks that are ill."

SUMMARY AND COMMENTS

There would appear to be a need for a limited number of laboratory technicians. A minimum of two years of college training was the educational requirement suggested by the majority.

Postwar college plans are looking toward refresher courses running from two weeks to two months. Up to 25 students may be handled at one time. Some schools expect to repeat the courses, if necessary. There seems to be an attitude of attempting to give the men what they choose. Four schools report a total of 22 positions which

Four schools report a total of 22 positions which carry the opportunity to do graduate work. Twenty-five veterinary experiment stations indicated increased postwar research. Ten offer graduate work, and ten reported they could give refresher courses.

In extending the usefulness of the veterinary profession various methods of bringing before the public things in regard to the veterinary profession are given. Some sort of extension education, radio programs, Smith-Hughes teachers, and newspapers are mentioned.

The extension of the various public health activities, more especially meat, milk, and dairy inspection are stressed as bringing before the public new values for the veterinary profession. Meat and dairy inspection may be increased. Special surveys of the need for the extension of meat, milk, and dairy inspection are being made in many states. The results of these will be available later.

states. The results of these will be available later. Of various activities which may offer prospect of development, artificial insemination comes first. Various communities have had different experiences in developing this program. It would seem that the veterinarian can safely only participate in this work in so far as he can keep it under his guidance and direction.

Poultry practice was considered only by a few

as possible of development.

The return of veterinarians in army service is of great importance to the future of the profession. The finding of their proper niche is a challenge to us. In less than half of the replies are any definite thoughts being given to the "mustered-out" veterinarian by local associations. Their problems have been given some thought by others, such as refresher courses, finances, and locations.

Surveys of army veterinary officers may be of considerable assistance in meeting their needs. Such

surveys are being made.

It would seem that group practice should be given most serious consideration. It might be thought of as a method of meeting the problem of increasing the value and efficiency of veterinary service to a community. In the light of attempts to legislate a form of medical care for the human population, this might be a method to postpone such an attempt for the care of animals. This so-called Group Practice is based upon the working together of a group of—in this case—veterinarians who by being given an opportunity to specialize somewhat may take care of neglected fields. We should be forewarned that, if we do not take care of these fields, someone else will, and he may not be a veterinarian.

There would seem to be considerable diversity of opinion in regard to the employment of lay assistants. Local conditions apparently govern present practice in this regard. A danger that is stressed is the danger of quackery. Education of

clientele and exercising careful selection in the choice of individuals to be trained as lay assistants may help to develop a relationship which will be for the better interests of the profession. In many sections of the country the load on the practicing veterinarian due to excessive volume of business makes necessary the use of some form of assistants. Properly trained individuals who would have the same relation to veterinarian and animal patient as that which the nurse has between physician and human patient would seem to meet the need.

Postwar changes in agriculture and industry and in animal production may be looked for in many communities. The possible effects of these changes, as they may affect veterinary practice, should re-

ceive intense study.

A community veterinary pathologist to be financially supported by a group of veterinarians did not seem to be desirable, although in many localities regional pathological laboratories, as a part of the state control of animal disease, seemed warranted. In many localities there is too great a distance between diagnostic laboratories and the veterinarian for efficient service. There does seem to be considerable need for district pathologic offices, and the problem of their development is certainly deserving of much study.

The use of laboratories of human hospitals was not generally satisfactory enough to meet the needs

of the veterinarians canvassed.

Suggestions for improvement of veterinary curriculums mainly concern but a few phases. In the clinic years there is need of more practical training. There is a dearth of training in animal nutrition in which would be included more work in blochemistry and possibly animal husbandry. Meat, milk, and food inspection also should receive more attention. Another series of suggestions comes in the relation of the veterinarian as a professional man before the public. Here added training in public speaking, in English and journalism, and more work in the basic sciences are stressed. Inadequate faculties and teachers with too limited experience also are to be noted amongst the suggestions.

Internships in veterinary medicine present somewhat more of a problem than for human medicine. In the latter case is the national requirement that every physician upon completing his training in a medical college must spend at least one year in an approved hospital before he is permitted to practice. Further, if the physician desires to specialize, he must spend more years of training in the specialty before he qualifies to practice that

specialty.

In veterinary medicine there are but few hospitals similar to those in human medicine. In cities there are many small animal hospitals and some devoted to a mixed type of practice. The numbers are too small to accommodate the graduating classes in veterinary medicine were the plan of internships to be generally required. Then, too, probably a somewhat larger percentage of veterinarians goes into large animal or mixed animal practice. This means that the local practitioners in the smaller community would have to provide the training. The selection of the hospitals and of the veterinarians with which internships may be taken and the supervision of the interns present a problem. This is surely not an insurmountable difficulty. Various suggestions are available by proponents of the plan. It does seem worthy of the most serious consideration, since it would seem to fill the gap between the veterinarian's academic training and his ability to earn a living as a professional veterinarian.

No conclusions upon a basis for veterinary practice were drawn from the meager data available. This problem is being studied in connection with that on the county distribution of veterinarians and will be reported separately.

In order to attempt to arrive at a basis for

distribution of veterinarians certain studies are being conducted. Lists of veterinarians practicing in the various states of the United States and the provinces of Canada have been received. These lists are to be broken down into smaller units. In the case of those from the States, they are subdivided into county groups. These county groups are to be plotted against the number of farms, the number of livestock in various classes, the value of the livestock, the human population, and possibly other factors in an attempt to arrive at a correlation of the need of veterinary service to other factors. This information, as soon as completed, is to be sent to the Office of the Secretary of the American Veterinary Medical Association, there to be included in the clearing house material which may be used as partial information for those desiring positions, locations, etc.

Two contributions may be made to the work of the Public Health Service—the one in the field of sanitation of food products and the other in epidemiology of diseases which may have animal reservoirs. To carry on the program of this service, a fairly goodly number of veterinarians is needed. The Sanitary Division of the United States Public Health Service may in the future be divided into three parts: the sanitary engineer, the entomologist, and the veterinarian, each having his own critical problem.

It was shown that special training is needed in the field of public health and that after two years of experience, one of which may have been devoted to graduate work in public health schools, a veterinarian is eligible for appointment at an entrance salary of \$3,400.

There is need for the veterinarian on public health boards; also he may act as a member of the staff of local health departments either as part-time or fulltime in supervising meat and milk handling and meat sanitation regulations.

An ideal health unit is said to be a population of 30,000 to 40,000 with a budget equal to \$1.00 per capita for the public health program. Most veterinarians in this work are in larger cities, and those in other communities must be educated to its value.

Poultry practice presents various pictures. There has during past years developed a type of service to the poultry industry which quite ignores what the veterinarian may rightfully contribute. The proprietary drug concerns, the feed man, and the hatcheryman have, because they have been trained to sell a product which is their business, so well done their job that their service is first thought of in case of disease in the farmer's flock.

This type of relationship is a difficult one to change. When disease is present the drug peddler sells his panacea, which is a specific—the hatchery man and feed man, too, have their specifics—which, along with their advice, often appear to work miracles because of the peculiar course of many diseases of poultry. By the time the treatment is supposed to have become effective the disease would have pretty well run its course.

There is in the offing a type of possible approach to the problem. The approach may first be made through education, reëducation of the groups concerned. The practicing veterinarian who would be the diagnostician and supervisor of whatever health or therapeutic measures are to be employed would have his rightful place, as in the case of any other farm livestock. The local practitioner is the basis of this setup. The application of control or treatment may be done by trained laymen who might be likened to nurses in human medicine. Such individuals are to be, in this plan, under the direct supervision of the veterinarian making the diagnosis. (They may supplant the itinerant peddler.) Groups like the state veterinary associations, state hatchery associations, federal groups, county agents, packing house buyers, 4-H clubs,—

all will have to be educated to the plan. A poultry extension veterinarian may well be the liaison officer to correlate the working of these groups.

The practicing veterinarian in many communities is doing much poultry practice. In whatever plan may be evolved to care for the poultry problem the practicing veterinarian has his place. This place must be established by convincing the flock owner that the service rendered for his flock is definitely superior to that rendered by the peddler, the feed salesman, the hatchery man, or the obliging druggist. The flock owner must have this point of view. The veterinarian must assume his full place in handling poultry disease just as in the case of any other class of livestock. If he does not do this, someone else will, and he may not be a veterinarian.

RECOMMENDATION*

It is recommended that this committee be continued for another year, that its membership vacancies be filled by appointments resident in the United States and Canada, and that affiliate members composed of the chairmen of Public Relations, Legislation, Education, and Poultry Committees of the AVMA, of a representative of the U. S. Live Stock Sanitary Association, of one from the Committee of Animal Health of the National Research Council, one from the Inter-Association Council on Animal Diseases and Production, and one from the Procurement and Assignment Service, be asked to meet with the members of the Committee at least once during the year.

ACKNOWLEDGMENTS

The members of the Special Committee on Postwar Planning of the American Veterinary Medical Association express their sincere appreciation for help in securing information. In many cases, a great deal of work was necessary in preparing requested material. To all those who assisted in the arduous task of getting this material together we are most grateful.

Questionnaire No. I

- 1) How can the usefulness of the veterinary profession be expanded in your community without jeopardizing the veterinarian's income and his service?
- 2) We, as a profession, have been criticized for not caring for poultry, milk inspection, and other specialized veterinary activities. The reason the veterinarian does not readily take to this work is because he neither has the time nor experience for it. How can the profession render good service in these fields? Will a group practice or clinic solve this situation?
- 3) Should a system of internships for the recent graduate be developed?
- 4) Can special activities like artificial insemination, specialized poultry practice, meat and dairy inspection, be developed in your community? What is your interest and what is being done to stimulate interest in these fields?
- 5) Would veterinarians in your community have use for trained lay assistants or trained techni-

^{*}The original report submitted by the Committee contained the following recommendation, which was deleted by the House of Representatives on recommendation by the Executive Board:

It is recommended that there be created in the Office of the Secretary of the Association a clearing house bureau covering positions, locations, and opportunities of various kinds. This is not to be a placement agency. It is only to be a source of information. Such an undertaking would be of value to not only the returning veterinarians, but also to relocations which may arise.

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(Lay assistants and trained technicians cians? should not be confused with handy men who help veterinarians. These people would be trained in nursing and veterinary medical laboratory procedure.)

6) Would a veterinary pathologist located in your community, available to serve, for example fifteen veterinarians, be helpful to the practitioner

and livestock industry?

7) What change in the animal population of your community do you anticipate for the post-(The period of rehabilitation and war period? after that.)

Many veterinarians have gone into military service. Some have voluntarily enlisted and some have been called. What problems will confront these men when they are mustered out of military service? How will we meet these problems? What is your association doing to see that they will get properly located upon their return?

How many animals are necessary to justify the establishing of a well-balanced country veter-

inary practice?

A) Number of square miles
B) Number of farms C) Number of animals

1) Horses 2) Cattle

a. Dairy

b. Beef Breeding

c. Stockers and feeders

3) Swine 4) Sheep

5) Poultry

communities have local hospitals aboratory facilities. These facilities which have laboratory facilities. These facilities can be made available to veterinarians for assistance in diagnostic problems. Do veterinarians in your community use these laboratories?

Questionnaire No. 2

What is the total number of veterinarians residing in your state? This includes all veterinarians whether retired or in other lines of business and should be given by counties.

A) Number in large animal practice.
 B) Number in small animal practice.

C) Number in public health and disease control activities.

D) Number in special activities. (Specify.)

- E) Number in commercial work.F) Number in institutional work including research.
- G) Average age of all veterinarians in your

2) How can the usefulness of the veterinary profession be expanded in your state without jeopardizing the veterinarian's income and his service?

3) Can activities like artificial insemination, specialized poultry practice, meat and dairy inspec-tion, county or district pathological offices, and a system for internships be developed in your state?

What is being done to stimulate interest in these flelds?

How many veterinarians have left your state to enter army service? Do these men plan to return to their old locations following the war? What provision has your state made for caring for these men after being mustered out of the army?

5) Would your state favor group practice or assistants both in large animal and small animal activities? In busy practices lay assistants or nurses have been suggested as an aid to veterinary

6) What training should they have?
6) What change in the animal population of your community do you anticipate for the postwar period? (The period of rehabilitation and after that.)

What industrial and/or agricultural trends do you foresee for your community during the next

few years?

Are veterinary curriculums as taught today 8) adequate to meet the needs of the veterinary pro-fession? If not, what should be added? s/ H. L. Foust, Chairman

J. A. BARGER CLIFF D. CARPENTER C. U. DUCKWORTH COL. J. E. NOONAN

PETER OLAFSON V. C. PAUHLMAN W. H. RISER ALAN C. SECORD JAMES H. STEELE

National Board of Veterinary Examiners

At the last annual meeting of the House of Representatives, there was some discussion relative to our present methods of licensing graduates recognized veterinary colleges and the multiplicity of examinations required before graduates were permitted to enter various fields of veterinary serv-Out of this discussion came a recommendation that the Executive Board appoint a special committee to study this problem and report back to the House at its next annual session. As a result, the Executive Board appointed a "Special Committee on National Board of Veterinary Examiners."
During the past year, there has been no opportunity for the entire committee to get together for a complete and thorough discussion of the sub-ject, and most of the work has been carried on through correspondence. However, during the U.S. Livestock Sanitary Association meeting in Chicago, your chairman was able to contact and get the view points of three members of the Committee and certain plans were formulated.

It was generally agreed that the establishment a National Board of Veterinary Examiners would be a decided step forward in our profession, and would be a creditable substitute for the licensing examinations as conducted in many states at the present time, and if it were of the proper caliber, might be substituted for examinations now required for other branches of veterinary services, such as the United States Bureau of Animal Industry, Veterinary Corps, Army of the United States, research institutions, etc. It was further generally agreed that the creation of a National Board of Veterinary Examiners would be a stimulus for more diligent work on the part of veterinary students and faculties, and would result in greater uniformity in the curriculums and student training

in the various colleges.

However, it was decided that, before setting up a plan of this kind, it would be best to get an expression of opinion from the state veterinary officials in the United States relative to the advisability and need for such an undertaking. As a result, the following letter was sent to the state veterinarians of each state:

"As you perhaps know, the American Veterinary Medical Association has appointed a special committee, on 'National Board of Veterinary Exami-ners' for the year 1943-1944. The function of this committee is to study the advisability of establishing a National Board for examining veterinary graduates and devising some workable plan which, it is hoped, will elevate the standards of the profession. We want it definitely understood at the outset that there is no intention on the part of the Association to usurp the individual state's rights by taking away any powers from the examining boards in the various states. Instead, we feel it boards in the various states. Instead, we feel it is the duty of the Association to assume the leadership in matters pertaining to veterinary medi-cine, and, in the establishing of a National Board of Veterinary Examiners, it is hoped that our professional prestige will be enhanced and, at the same time, much of our present duplication of examinations for veterinary graduates will be eliminated. The Committee feels that our profession should have a national board of veterinary examiners, the personnel of this board representing all phases of veterinary medicine, similar to the

national examining boards in most of the other professions. Those students from colleges recognized by the American Veterinary Medical Association, who successfully pass these examinations, are to be issued certificates, which it is hoped will in time be recognized by the examining boards of the various states, and other groups, such as the United various states, and of Animal Industry, Army of the United States, research institutions, etc. Coöperation in such a plan would be entirely voluntary, and in many states may require a change in the practice act. I might also point out that there is no intent in this proposal to eliminate the licensing fee for the practice of veterinary medicine in the various states.
"However, we do feel a national examination

would be a creditable substitute for the examinations as conducted in most states at the present time. In addition, it would be a stimulus for more diligent work on the part of veterinary students and might result in more uniformity in the curriculums in the various veterinary colleges.

"Before setting up the details of such a plan we would like to have an expression of the opinion of representatives from all phases of our profession. I would, therefore, greatly appreciate your frank opinion as to the advisability of such an undertaking and whether the states would take kindly to such a plan. I assure you your opinions and suggestions will be greatly appreciated."

At the time of writing this report, 31 replies have been received. Of these, 22 have expressed themselves definitely in favor and indicated there was a real need for such a board. Six replies were equally emphatic in their opposition to such a move and saw no need for such an undertaking at this time. Three were undecided and felt that they wanted more information and more time to study the entire proposal before rendering a decision. The following are some of the reasons given for opposing such a plan, and are deserving of careful consideration:

1) It would tend to create a certain group of roving veterinarians, from one state to another, wherever veterinary practice appeared the most lucrative.

2) In certain states, it would result in a hardship on the local resident practitioners, as a result of an influx of veterinarians setting up practice during the winter season and then returning to their homes with the advent of warm weather.

3) If it were not for the restraining influence of a state board, there might result a surplus of veterinarians in the more favorable or lucrative practice sections, which would undoubtedly result in fee cutting, and thus would have a tendency to lower the standards of the profession.

4) It would have a tendency to create a "super class" of individuals (those who successfully pass such an examination) within the profession which might lead to discord and thus impede progress.

5) Interference with state rights.

Out of these letters another thought was exressed which we feel is deserving of some consid-During this war period, many graduating veterinarians may only have an opportunity to lake a state board examination in the state in which they graduated, before being taken into the Army. Consequently, when the war is over, these men will tend to return to the state in which they are licensed, which may result in a surplus of reterinarians in the states having veterinary coleges, while other states may suffer from a scarcity of veterinarians.

Naturally, men having spent several years in the army would hesitate to subject themselves to critial state board examinations. Thus, it is readily onceivable that the postwar difficulties anticipated above might actually occur. A plan for more general reciprocity among states was suggested as a lemedy for the above problem.

One of the letters, representing the views of the

veterinary medical association of that state, was definitely opposed to a national board of examiners but suggested instead a "reciprocity committee" study some program of nationwide reciprocal agree-

ments between states.

It was also brought to the attention of your committee that, some years back, a report presented to the Executive Board of this association, relative to a central board of veterinary examiners. After some correspondence and searching through the files of the Association, the conplete report of this committee was found. This report has been examined by your committee and find that it embodies in principle our of the organization of such a board. We are fully cognizant of the vast amount of work and correspondence which went into the formulating of this report and your committee feels that Dr. L. M. Hurt, as chairman, and his committee should receive recognition and credit, even though somewhat belated, for this fine piece of work. We are, therefore, presenting this report along with the events leading up to the appointment of the committee. Dr. Hurt's report to the Executive Board follows:

Progress Report of Committee on Centralized State **Board Activities**

"In accord with action by the California State Veterinary Medical Association during a special session called at the University Farm, Davis, California, in January, 1935, a committee was selected to prepare a report upon the feasibility of centralizing veterinary state board activities in the United

"A preliminary report was drafted upon information received from the secretaries of the Royal College of Veterinary Surgeons in England and the National Board of Medical Examiners in America, and presented before the California Association during its annual meeting held at San Diego, June, 1935.

"Following discussion, a resolution was offered and passed that the Committee be continued and instructed to present a similar report to the American Veterinary Medical Association through the

proper channels.

"Further information was gained from Sir Frederick Hobday and Dr. Fred Bullock, of the Royal College, by correspondence, and Dr. G. Mosely Taylor, Los Angeles, member of the National Board of Medical Examiners, by interview. A digest covering the workings of these two boards was prepared and submitted to the officers and members of the Executive Board early in August of 1935, so that they might be informed upon the nature of the proposition to be brought up consideration during the annual meeting, the adoption of which in some form would affect the profession from so many angles.

"By the time of the national meeting in Oklahoma City, these officers had given our report very careful consideration and were ready for its dis-It was interesting to note the reaction in the minds of these men, many of whom are or have been at some time engaged in educational work. Naturally, the tendency was to find objection to the plan, but each confessed to the same conclusions, viz., that he could not see any reasonable objection to it.

"Dean Brumley, of Ohio, a member of the Executive Board, told the officers and members a member of the present that the dentists of America, through their national association, have already taken this step, and have established a national examining board in dentistry. Eight states have already voted to accept its findings, and now the American Society of Civil Engineers has in preparation a plan for in dentistry. a similar board and system of conducting exami-

"Apparently, therefore, we need not grope in the dark in developing this project. There are already some good examples to follow. We have a distinct advantage in being able to profit by the experience of other professional groups. These will be of value to us in drafting our plans for the selection of proper representation upon the central board, rules and regulations governing examinations, methods followed in securing the recognition and approval by the various states, or certificates awarded by the board to successful candidates.

"Upon regular motion, duly seconded and carried during this meeting, the chairman of the Executive Board appointed a special committee consisting of Doctors Hurt, Brumley, and Hays, to give further study to the proposition and the possibility of establishing a central board of examiners in veteri-It has been our pleasure to develop nary service. a plan for presentation to the House of Repre-sentatives. We have assembled from the English and American examining boards their plans of organization, printed forms and sample sets of examinations, and have been in communication with officers and members of such examining boards for the purpose of ascertaining official and personal expressions upon proper representation on the board. We are studying their methods of utilizing the services of college faculties and resident secretaries in presenting examinations, so that expenses may be held as nearly as possible within the income of the board. There should be further conferences and correspondence to obtain suggestions of value upon securing charters, details of organization, etc.
"We have been encouraged to carry on

"We have been encouraged to carry on this work by the interest shown by the Executive Board, the deans and members of veterinary faculties who are acquainted with the progress of the other medical groups to date, and many practitioners who are deeply interested in the future welfare of our profession. All seem impressed with the extended and helpful influence such a system of examination should exert upon veterinary education, and the advantage gained by successful candidates in avoiding the inconvenience and expense incurred in taking state board and civil service examinations.

"This plan of conducting examinations does not present serious problems. The number of schools is comparatively small. Delivery of sets of questions by mail or express may be so timed that the date of examinations will be the same for all sections of the country. Conducting examinations under proctors or resident assistant examiners or associate secretaries; the collecting, sealing, and transmission of papers to the central board examination committee; reports upon results, etc., are all matters of detail which should be readily and satisfactorily worked out.

"Possibly the most important phase of the problem is that of deciding the proper membership of the central examining board. It is vitally important that the membership be thoroughly and properly representative of the profession. The American Veterinary Medical Association will naturally be accorded proper and sufficient representation, since it is the really representative veterinary organization of the country. It has played a major part in promoting the use of veterinary service in new fields whenever opportunities were afforded, and keeps 'a finger upon the pulse' of every branch of veterinary activity.

"The board should have a good representation from the veterinary college faculties in order that the trend of veterinary education may be apparent in the type of examination submitted from year typear. Research workers should have the privilege of examining newly graduated members of the profession in the objects and application of the effects of research, and the principles upon which research is founded. These men should be given a voice in the presentation of questions covering recent advances in the field of science with which all of us, and especially recent graduates, should be acquainted.

"The United States Bureau of Animal Industry must be allowed to express an opinion upon the nature of questions for examinations, for it will continue to receive a large proportion of each year's graduating class. It is hoped that the Bureau will find it possible to waive any other examinations in connection with entrance into its service.

"The Army is intensely interested in the type of men available for enlistment in the Veterinary

"The Army is intensely interested in the type of men available for enlistment in the Veterinary Corps. No division of the profession has done more to advance the rank and standard of the profession during the past few years than has the Veterinary Corps of the Army, and it stands ready and is continually working to raise the profession in efficiency and public esteem. Very naturally, the senior officer should be called upon to contribute his share towards bringing these examinations up to a standard that will enable graduates to meet the very fine requirements for army service.

"With the increasing use of veterinarians in food inspection and sanitary service, it is more than possible that in the near future the chief medical officers of the Army, Navy, and/or United States Public Health Service should have representation on the board. It is understood that veterinarians are already accorded important portions of their work, not only in passing upon the specifications and condition of meats, poultry, and dairy products, but the responsibilities of inspecting fruits, vegetables, and canned goods has in many instances been placed in the lap of the veterinary profession. The result of our work in these connections will decide how permanent a system will result. Naturally, the higher the qualifications and more complete the training of our coming graduates the more certainly will this field of food inspection continue to be placed in the category of veterinary activities.

"There is no national association of state veterinary examining boards in America similar to the associations of medical and dental examining boards from which one or more representatives can be drawn. This gap may be filled by the selection of individuals from among the profession by regions, men who are outstanding in their efforts to raise the standards of the profession in their respective communities, either through serving upon examining boards, taking leading parts in organization work, public affairs, etc. We can safely include a sufficient number of such practitioners to give balance to this organization, which they can do from their years of experience in the field and the knowledge they have gained along practical lines. After all, they are the ones who can judge best what kind of an examination really shows fitness to become practitioners among candidates with veterinary degrees and—again—after all, what is education but 'fitness'.

"We should bear in mind that the central board would not supplant state veterinary boards. The proportion of candidates applying for state examination for license to practice would naturally decrease from year to year as the percentage of graduates competent to pass the central board examination increased. Under acts governing veterinary practice, the state boards of many states have authority to extend reciprocity to practitioners registered in other states, and amendments to recognize the credentials of central board graduates should be added in all of them.

"Under this system, state boards would assume more and more the functions of regulatory bodies as years progressed, which would have many arguments in its favor. However, there is little likelihood that the functions of state boards as examining bodies would cease entirely for many years, certainly not for a generation at least, as they must continue their services in examining large numbers of graduates moving from one state to another, and from public service into private practice. Their usefulness in this field should continue until the authority of the central board has

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een extended to cover the examination of all graduates from all the schools in America. The certificate or diploma issued to them, as in the case of the Royal College of Veterinary Surgeons, should be ordained to constitute the license to practice in all states of the Union.

"Submitted for consideration of the 73rd Annual Convention of the A. V. M. A.

Special Committee on Centralized Examining Board

August 1936.

Report of Committee on Centralized State Veterinary
Board Activity by Doctors L. M. Hurt, O. V.
Brumley, and C. H. Hays

"It is proposed that a central board of veterinary examiners be sponsored by the American Veterinary Medical Association at its annual meeting in Columbus, Ohio, August, 1936. "The purpose of the central board of veterinary

"The purpose of the central board of veterinary examiners shall be to establish a standard qualifying examination in veterinary science of such character that their certificates awarded successful candidates may be accepted by all state veterinary examining boards as an adequate qualification for the practice of veterinary medicine, subject to the

requirements of the laws of the various states. "It is believed that the functioning of such a board will exert a marked influence in gradually raising and standardizing the qualifications for the practice of veterinary medicine, and thus serve to establish the profession more firmly and favorably in all communities and connections in which veterinary service may be utilized.

"The central board of veterinary examiners should consist of 25 members selected from the membership of the American Veterinary Medical Association, of whom 20 are appointive and 5 ex officio. It is recommended that the selection of the appointive members be made as follows:

"Five members from the Association of Veterinary College faculties and research workers.

"Fifteen members selected at large. Consideration should be given personal qualifications for service upon such a board, such as practitioners having experience upon or connected with state veterinary examining boards, activity in veterinary association work, and veterinarians connected with state and municipal veterinary service units, etc.

state and municipal veterinary service units, etc.

'For the purpose of securing careful consideration of eligible veterinarians in this connection we recommend the following method of selection:

"A list of candidates to be submitted by the Executive Board of the Association to the House of Representatives for consideration, approval, and election. Consideration should be given to geographical distribution as much as possible.

"We recommend that, of the ex officio members, three be representatives of the American Veterinary Medical Association, viz., president, chairman of the Executive Board, and secretary. In addition, we should have (4) the chief of the United States Bureau of Animal Industry and (5) the director

Bureau of Animal Industry and (5) the director of the Veterinary Corps, United States Army.

"The term of office of the 20 elective members shall be four years, five members to be elected each year, during and in connection with the regular business of the annual meeting of the American Veterinary Medical Association.

The term of office of the first 20 men selected shall be determined by lot at the first regular meeting of such board, the results immediately fled with the secretary, who shall with the approval of the president and/or chairman of the Executive Board, inform each member in writing of the length of his term of office.

"Any vacancies that may occur upon the board shall be filled by appointment by the chairman of the Executive Board until the next annual meeting of the American Veterinary Medical Association.

"This preliminary organization of the board will select a president, vice president, and secretary (utilizing services of the American Veterinary Medical Association secretary optionally), and shall proceed to draw a constitution and by-laws, such as may be necessary to govern the activities of the board and cover the terms of office and duties of the officers.

"Having received the approval of the Executive Board and its legal counsel on the constitution and by-laws, the central board shall proceed to file an application for a charter under the laws of the state of (Medical and dental boards chartered under laws of State of Maryland.)

"Upon securing a charter, the central board shall perfect a permanent organization with a president, vice president, secretary, treasurer, and an executive or advisory committee of three.

"The board shall thereafter constitute itself a committee of the whole to place the proposition of central board examination before all veterinary college faculties, state veterinary examining boards, state and local veterinary organizations for their approval, and endeavor to secure the passage of such state laws or amendments to existing laws as will make possible the utilization of the services of the central board by the several states.*

"It will be necessary to establish within the board an examination committee of three whose duty it shall be to draft examinations from questions submitted by the remaining members of the board. It will probably be advantageous to have the executive committee assume this duty. It would also seem to be an advantage that the secretary act as chairman of this examining committee.

"The requirements for admission and plans of examination should be worked out by the board very carefully after having collected for study all the requirements for admission of the several colleges in America and state laws now in effect governing the examination of graduate veterinarians for practice.

"(In recommending this plan of examination to you it is not our intention to encourage development of a class within the profession 'set apart from the crowd', a group of veterinarians as it were, who might establish themselves under some title approximating a special degree fraternity or something on that order. On the other hand, it is highly advisable that all students be sufficiently well prepared upon graduation to pass any reasonable examination that might be promulgated and secure a high average grade. Such examination above all things should be a fair examination, not interspersed with catch questions but one planned to draw out the real scope and thoroughness of each man's training and to determine his ability to remember details. A central board certificate provides him a permanent record on the date of his final examination which should be acceptable

^{*}Forty-four states and three territories of the United States recognize the certificates of the National Board of Medical Examiners, organized in 1915.

Eleven states recognize the certificates of the National Board of Dental Examiners, organized in 1928. Several more states are rewriting or revising their dentistry practice laws to allow acceptance of national board certificates.

We have been informed that a national examining board of civil engineers is now in the process of organization. Twenty states now have examining boards in civil engineering.

for a term of years following date of issuance, by the several states and agencies employing veteri-

narians.)

"For the purpose of preparing questions, subcommittees may be appointed among the membership to work upon closely allied subjects. It is
suggested that each subcommittee consist of one
member of a veterinary college faculty and three
members at large. These need not necessarily
reside in the same vicinity.

'The examining committee shall keep a file of all questions presented and used in examining candidates to which reference may be made to avoid too frequent repetition in questions submitted from year to year.

"The number of questions received by the examining committee from the other members of the board, and the number to be selected therefrom and used in a set of questions, shall be a matter for the consideration of the whole board.

"Applications for examination by the central board should be received by the secretary thirty days in advance of the date set for examination.

"Applicants for section 1 of the examination shall present satisfactory evidence of having completed:

a) Standard four years high school course.
 b) At least one year of acceptable college work, including English, physics, chemistry, biology, and

a foreign language, preferably Latin and/or Greek. "Examination I should be a written examination given after the completion of the first two full years course in veterinary science. (It may contain questions covering important subjects included in the list of preveterinary requirements.) The board may have some difficulty at first in arriving at a fair basis upon which to select and evaluate the subjects of the first two years, since the curriculums in the several schools are not the same. In such cases, upon request of the dean or directors of a college, the board may arrange to allow incomplete or divided examinations. However, the functioning of such a board, and the preparation of students by the several colleges to pass such examinations should tend to standardize the courses of study to a considerable degree.

"Examination 2 is also written. To be eligible, a candidate must have passed examination 1, and completed successfully the four-year course of a recognized college of veterinary science. If its regular scheduled examination should antedate the graduation date of any college, the board may withhold its marking of papers pending the securing and presentation of diplomas by the candidates.

"The central board shall establish supervising boards for conducting examinations at the recognized colleges throughout the country. These may include the members of state veterinary boards and reputable practitioners who are not affiliated with state boards, in addition to members of the faculty.

"Your committee considers it advisable to hold a third examination which shall be a comprehensive practical examination covering a minimum of two days, and include not only the diagnostic ability of the candidate but the operative and laboratory training. It should consist of a clinical and practical examination in clinical procedure and diagnosis; clinical surgery; clinical medicine; pathological and parasitological examinations, including postmortem technic, macroscopic and microscopic examinations and reports upon the tissues and organs; meat and milk hygiene. Attention should be paid to specialization on the part of certain A candidate must have successfully completed examinations 1 and 2, and received a diploma from a recognized veterinary college before he is eligible for examination 3.

"While it may not be practical to institute this division of the examination at present, it should be required as early as can be arranged.

"Further recommendations and suggestions are limited, since they would apply to such details as determining the fees necessary to cover expenses: preparing questionnaires; arranging for and conducting examinations under responsible supervision; transmission of question sets possibly through board members; identification and collection of examination papers and their safe return to the examining committee of the board for correction and evaluation; assignment of grade values to different subjects; establishing passing, conditioning, and failing marks or grades; filing of examination papers for stated periods of time pending receipt of any protests upon marks; issuance of proper certificates; consideration of applications for reëxamination, and decision upon conditions warranting reëxamination, etc. These are matters which require serious consideration by members of the board and they must be given ample freedom for decision in accord with their judgment and experience gained from year to year.

"We recommend your careful consideration of this plan to establish a central board of veterinary medical examiners."

> L. M. HURT O. V. BRUMLEY C. H. HAYS

Those who have studied the organization of the national examining boards of other professional groups will note a marked similarity to this proposed plan. Your committee recognizes and has in mind some changes which should possibly be made in this plan, to meet some changing conditions since the plan was originally proposed. However, from the standpoint of organization and functioning of a national board, the plan as outlined contains information which will be of value to the members of the House of Representatives in presenting this question to the various constituent organizations which they represent.

Your committee feels that this whole matter is one which requires very serious deliberation by every member of our profession, and should not be acted upon hastily. We, therefore, recommend that final action on the proposal of establishing a national board of veterinary examiners be delayed until our next annual meeting. In the meantime, each member of this House of Representatives should present this matter to the organization which he represents, in order that the delegate may be instructed to properly carry out the wishes of his constituents when it comes up for final settlement. If, at that time, the House of Representatives votes favorably on the proposal for a national board of veterinary examiners, your committee feels that a committee should be appointed, and the necessary funds provided for this committee to get together for the purpose of working out the necessary details of the organization.

It is the hope of your committee that each delegate will conscientiously study this report and encourage free and full discussion in their various organizations, in order that any final action taken will represent the best opinion of our entire pro-

s/ Walter R. Krill, Chairman.
Geo. W. Blanche R. A. Kesler
A. W. Miller L. A. Merillat

Committee on Foods

Wartime problems, such as the shortage of ingredients and manpower, inability to obtain cartons and containers, and congested transportation, have not affected the work of this committee as seriously as it was anticipated one year ago. Progress has been made regardless of handicaps.

The chemical and biological testing, using dogs for test animals, has been continued at New Brunswick, New Jersey. An important refinement has been introduced to evaluate the biological value of proteins used in the production of tested and

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accepted foods. Measurements are made to determine the total protein consumed, the amount eliminated in the feces and urine, and the amount actually used and retained by the animal for body functions. Thus, the quality of the protein consumed by the animals eating tested and accepted foods is known. According to these and other tests which have been conducted during the year, it has been found that the quality of foods under supervision has been maintained at satisfactory levels and meets the standard prescribed by the Committee and its advisory scientific council.

When the government placed limitations on the amount of protein which could be used in manufacturing pet foods, the Committee decided to test such foods against a maintenance standard, since it appeared at that time that the breeding of pets on a commercial scale would be drastically curtailed for the duration. A maintenance food is considered one which, when fed as the sole article of diet to a normally exercised adult dog in a condition of sexual rest, will provide satisfactorily for the nutritive requirements of the animal. Data collected during the past year indicate that tested and accepted foods, when fed to adult dogs unsupplemented, met the prescribed requirements. It is not uncommon for an individual test animal to be fed the same brand of food for an eight-month period. It is interesting that no skin diseases have occurred among the animals on test, nor any so-called "running fits", convulsions, intestinal disturbances, or vomiting. No evidence of paralysis, xeropthalmia, rickets, depraved appetite, nor other symptoms associated with nutritional deficiency diseases have been encountered.

During the year, the War Food Administration terminated Food Distribution Order 58 and at present there is no government order regulating the production or distribution of pet foods. Discon-tinuation of this order permits producers to return to prewar formulas provided they can obtain the necessary ingredients to fabricate the foods. This necessitated a revision in our testing procedure to comply with the desire of some producers to manufacture complete rations. Accordingly, tests must be carried out to prove the adequacy of the foods for reproduction. Experience has shown that the most stress is placed on a food by feeding it un-supplemented to an animal during the reproduction period. Manufacturers of tested foods desiring to claim that their products are complete rations must, therefore, produce foods which, when fed as the only source of nourishment, will satisfactorily provide for gestation and permit production of milk in adequate amounts and of such quality that the suckling animals grow normally. Unless a food can qualify in these respects, the manufacturer of a food under test by the Committee is not permitted use the designation "complete dog food" labels or in advertising.

In addition to the work with pet foods, two tests on horse feeds were completed. This work was carried out under the supervision of Professor H. H. Mitchell at the University of Illinois. One of the products tested was a commercially prepared horsefeed concentrate, the other a practical grain, hay, and mineral mixture. This work, sponsored by Derwood Mills, Derwood, Md., served to demonstrate the possibility of using guinea pigs as test animals for assaying feeds intended for feeding horses. It is believed that the method has possibilities and that information regarding the nutritive quality of horse feeds can be obtained in this

manner.

During the year, one contract with Vitality

Mills was terminated.

Dr. Louis A. Corwin of Jamaica, L. I., N. Y., was appointed by President J. B. Engle of the American Animal Hospital Association to a five-year term as a member of the Committee on Foods representing that Association.

The Committee was represented by its executive

secretary, Dr. M. L. Morris, at the following meetings and conferences during the year:

U. S. Government.—Two meetings, Food Distribution Administration; 1 meeting, National Research Council; 2 meetings, Pet Animal Industry Advisory Committee to the War Food Administration; 1 meeting, Office of Price Administration; 1 meeting, Bureau of Animal Industry.

Veterinary Meetings.—American Veterinary Medical Association, St. Louis, Mo.; American Animal Hospital Association, St. Louis, Mo.; 4 regional meetings of the American Animal Hospital Association; New Jersey Veterinary Medical Association; Pennsylvania Conference for Veterinarians; 1 conference, Colorado State College, Fort Collins, Colo.; 2 conferences, Michigan State College, East Lansing, Mich.

Other Meetings.—3 meetings, New York Biochemical Discussion Group; Feed Industry Conference, Chicago; U. S. Livestock Sanitary Association, Chicago; Conference, Yale University, New Haven, Conn.; Conference, University of Illinois, Urbana, Ill.; 3 conferences, American Humane Association, New York; American Feed Manufacturers Association, Chicago; Conference Committee on Mammalian Lactation Failure; 3 meetings, Committee on Foods of the A.V.M.A. and A.A.H.A.

Visits to Plants of Manufacturers of Tested and Accepted Foods.—1, Ballard & Ballard Company, Louisville, Ky.; 2, Carnation-Albers Co., Milwaukee, Wis.; 3, Kellogg Company, Battle Creek, Mich.

Wis.; 3, Kellogg Company, Battle Creek, Mich.
Articles prepared for publication by Dr. Morris
include: 4 items for nutrition section, J.A.V.M.A.;
5 reports for the bulletin of the A.A.H.A.; manuscript on "Mortality in Mammalian Young Due to
Nutritional Deficiency of the Mother's Milk."

s/J. G. Hardenbergh, Chairman
O. V. Brumley S. W. Haigler
L. A. Corwin A. E. Wight

FINANCIAL REPORT—COMMITTEE ON FOODS FOR 13 MONTH PERIOD JUNE 1, 1948 TO JUNE 30, 1944 RECEIPTS

Received from Manufacturers of Animal Foods for Testing, Inspection and Supervision.....\$16,673.49

 Advisory Scientific Council
 75.00

 Biochemical Consultant
 100.00

 Bonds and Insurance
 89.15

 Chemical & Biological Assays
 4,171.00

 Operating Expenses, (Kennel)
 1,779.54

 Miscellaneous
 146.96

 Total Expenses
 **

Report of Subcommittee on Veterinary Items National Formulary Committee

The Subcommittee on Veterinary Items of the Committee on National Formulary of the American Pharmaceutical Association has no formal report to make at this time. The following is merely intended as a brief statement of progress.

The Committee is able to report very cordial and satisfactory relations with the Committee on Re-

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vision. Information and advice have been routinely sought by the Revision Committee on items of possible veterinary interest, and the requested in-formation has been furnished. Something over a year ago our Committee was requested to make suggestions as to possible new inclusions in N.F. VIII of drugs or preparations peculiar to veterinary medical usage, or of special interest, for which standards might be established. After careful consideration several items were suggested. Among them were barium chloride, rotenone, pine oil, and emulsion of pine oil, and these are included in a recent release of new monographs which may appear in N.F. VIII. Other new monographs recently announced, which may appear in N.F. VIII, of special interest to veterinary medicine are acetylcholine, hydrobromide, allantoin, tablets of arecoline hydrobromide, tablets of sodium chloride with dextrose, and several others. Of the monographs, official in N.F. VII, which will not be included in N.F. VIII, only one would seem to be of particular interest to veterinary medicine. That is Croton oil. None of the inclusions in N.F. VI and N.F. VII recommended by this Committee has been dropped from N.F. VIII. Recently, the Committee has been requested for a statement on the importance of stronger tincture of iodine (16 per cent). If not regarded as of special importance in veterinary practice, it will be dropped from N.F. VIII. Information has also been requested on the use of National Formulary liniments in veterinary

Following the meeting of the Committee on National Formulary in Washington, D. C., on May 19-21, the following general statements were released, pertaining to major changes in N.F. VIII.

Deletion of nearly a third of the drugs in the

Deletion of nearly a third of the drugs in the current National Formulary VII and acceptance of 115 new monographs were among the extensive changes approved. The use of English instead of Latin for primary drug titles was one of the basic changes of policy authorized. This rather revolutionary action in pharmaceutical compendia was taken as a step toward greater rationality in drug nomenclature and is in conformity with the trend of modern medical science and prescribing. Latin is to be retained as the secondary title, appearing in smaller type in the position now occupied by present English titles. Metric doses will be given greater emphasis in the new National Formulary. Consideration was given to a proposal to drop apothecaries' dosage entirely, but the Committee felt that the steady trend toward the use of the metric system has not yet reached the point where apothecaries' doses could be safely omitted from the monographs.

Final developmental work on N.F. VIII is now under way, and the new edition is expected to be available for reference late in 1945, and become official in July, 1946.

s/H. D. BERGMAN, Chairman

Advisory Committee on Veterinary Medicine Procurement and Assignment Service War Manpower Commission

The past year has witnessed a number of developments affecting the wartime status of veterinary personnel, veterinary services, and veterinary education. In the main, these have been reported from month to month in the "Veterinary Profession and the War" section of the JOURNAL. The changing needs of the armed forces have caused revision of official policies and procedures regarding commissions in the Army Veterinary Corps for both volunteer applicants and for inducted veterinarians, in the deferment status of both graduates and students, in educational plans for veterinary students, and in

other matters vital to the maintenance of adequate veterinary service for the civilian population. These changing circumstances have caused considerable confusion at times and there is still much concern over the grave situation facing our educational institutions because of the shutting off of student material for entering classes.

It is not the purpose of this report to give a

It is not the purpose of this report to give a detailed account of the events of the past year which are already matters of record in the JOURNAL However, the principal items will be summarized.

1) In the fall of 1943, it became necessary to discontinue the commissioning of inducted veterinarians in the Veterinary Corps. This was because the needs of the Corps were more than met by the ASTP graduates, who became available starting in the latter part of 1943.

2) A special committee of the AVMA, comprising Deans O. V. Brumley and W. A. Hagan and the chairman of this committee, was appointed at the St. Louis meeting to confer with officials of Selective Service, the War Manpower Commission and others regarding the student situation. The Committee met in Washington Sept. 15-16, 1943, reviewed the whole veterinary educational question with several agencies, and obtained agreement on actions to be taken to maintain a reasonable number of students in the accredited colleges. A full report on this work will be found on pages 315-317 of the November (1943) JOURNAL.

3) On March 1, 1944, the Selective Service System issued a revision of Activity and Occupation Bulletin 33-6 in respect to student deferments. This limited the students in scientific and specialized fields to a number sufficient to meet civilian needs in war production and in support of the war effort, since the Army and Navy training programs were providing a supply of technical and professional personnel adequate for the armed forces. Deferment of civilian preveterinary and veterinary students in fulltime courses in recognized schools was provided for, in numbers not to exceed, for preprofessionals, 50 per cent of the total average number so enrolled in 1938-39 and 1939-40, and certification by the National Roster of the quota required for professional training.

4) In the spring of 1944, the need of the armed forces for draft inductees in the younger age groups caused numerous reclassifications of essential veterinarians into Class 1-A by their local boards. The threatened wastage of veterinary manpower so badly needed to maintain civilian and government services at once became of serious concern. The chairman of this committee spent several days in Washington, preceding a meeting of the Advisory Committee there on April 11, 1944, which was also attended by Drs. O. V. Brumley and H. W. Schoening as consultants. The result was a clarification of the deferment status of essential veterinarians by Selective Service Headquarters, specific inclusion of veterinary students in recognized schools and essential veterinarians in the list of critical war activities to be considered by local boards in deferment cases. This committee activity did much to correct, for the time being at least, the serious and rapidly deteri-orating situation facing the veterinary profession in relation to the war effort. A full report of this work will be found on pages 311-312 of the May (1944) JOURNAL.

5) In May, 1944, the War Department gave notice of the discontinuation of the ASTP program in veterinary education except for the senior classes. The official instructions provided that all veterinary and preveterinary ASTP trainees, other than seniors, would either be transferred to a unit of the Army Ground Forces, or discharged, at their option. The discharge option was of great significance since it provided an opportunity for discharged trainees to enroll as civilian students, if they so desired, and thus complete their veterinary training at their own expense. They then revert to

the jurisdiction of local draft boards, subject to the basic deferment provisions of Selective Service. (See the JOURNAL, July, 1944, p. 56).

Reports to date indicate that a majority of trainees are taking the option of discharge and enrolling as civilians, but some difficulty is being encountered in certain states with deferments of these students. However, the central office of the P & A Service and the National Headquarters of Selective Service have indicated that they will fully support the appeals of any cases that have to be carried to Washington.

6) For several months, efforts were made to arrange for the discharge of those veterinarians inducted by local draft boards and who have no opportunity of obtaining commissions in the Veterinary Corps where their professional skills could be used to fullest advantage. Discharge of these veterinarians was sought on the basis of the great need of the U. S. Department of Agriculture for personnel in the BAI field forces or in the Meat Inspection Division. It was thought that the professional skills of drafted veterinarians could thus be utilized by another government agency, or in some instances that these men might be permitted to return to essential civilian practice.

Although the policy and procedures for obtaining the release of inducted veterinarians to accept specific appointments in the USDA were finally agreed to by the heads of the War Department and the USDA, the plan promises to be unproductive for the following reasons. The deferment policies and procedures for government employees are determined and handled by a central governmental agency. In the case of veterinary personnel, this means that government veterinarians do not have the advantage of the effective work done by our state veterinary committees of the P & A Service in determining and supporting claims for essential occupation. result is that, if an inducted veterinarian were discharged to accept a government appointment, he would then be under the jurisdiction of his local draft board and, especially if under age 26, would in all likelihood fail of continued deferment later because of existing federal policies re government employees. In short, he might be released from the Army only to face re-induction later on. Your committee has discussed this problem with federal personnel agencies in an effort to obtain a solution but there seems little promise of a satisfactory result, even though the need for essential veterinary personnel is generally admitted by all agencies concerned.

7) In July, the central office was advised that Selective Service Headquarters were genuinely concerned over the shortage of veterinarians for essential services and would act to recommend more effective conservation of graduate veterinarians if furnished with substantial data on which to base their presentations to government manpower offi-Accordingly, a letter was addressed on July 11 to all veterinary agencies in the respective states asking for data on their acute needs for veterinary The information was then compiled by the central office and submitted, along with valid arguments, to the National Headquarters of Selective Service and the central office of the P & A At the time this report is written, the Service. results of the presentation are not yet known.

It is generally conceded in the field of veterinary medicine that the demand for practitioners, research workers, teachers, and scientists in specialized fields is increasing annually. It is probable that a marked increase in the present veterinary personnel of the country could find lucrative employment.

Government officials should look to the future for service to its citizens and agriculture in the medical sciences. The British Empire and Russia are far sighted in this respect. These great empires, war or no war, are directing the best qualified youth available into the three great fields of medical service: physicians, dentists, and veterinarians,—while our government manpower officials are drafting every available and vigorous youth to carry a rifle in Normandy, Italy, Burma, and in the South Pacific. The future of scientific medical, dental, and veterinary service, is dependent upon the education right now, and the immediate years to come, of a sufficient personnel to meet the greatly increasing demand for service in the important fields of practice, public health service, disease control and preventive medicine.

The present war has inducted approximately one third of the vigorous, young practitioners in medicine, dentistry, and veterinary medicine into war service. There just will not be enough young doctors, dentists, and veterinarians to fill the ranks as the older men leave the ranks of active service.

In conclusion, the Committee expresses special commendation to the state veterinary committees for the splendid and effective work which they have done on behalf of the veterinary profession during the past two years. The burden of the work has been great on the committee chairmen and the members who have worked at great personal sacrifice and without compensation to the end that the veterinary service of the nation be maintained as well as possible under wartime stresses. the conscientious and highly effective work of these state committees, a break-down in the disease control work so vital to food production and success in the war would have been inevitable. While the Advisory Committee has endeavored to function on problems relating to overall policies and developments affecting the veterinary service and the profession, the actual carrying out of measures concerning veterinary manpower have fallen largely on our state committees; we gratefully acknowledge their fine work.

> J. G. HARDENBERGH, Chairman J. R. MOHLER W. A. HAGAN CASSIUS WAY H. W. JAKEMAN

Humane Act Award

This Committee was appointed by President Bower to carry out the annual award, authorized by the House of Representatives, for work in behalf of kindness to animals. Considerable correspondence took place between members of the Committee, and discussions were held with interested individuals, to determine just how the award should be handled. It was decided that the award should be a suitable framed certificate for some exceptional work done in behalf of animals that emphasizes humane treatment or kindness to animals. A wide variety of activities could be included under this heading. Boys and girls not beyond 18 years of age are eligible.

Early in January, a letter was addressed to all veterinary schools, veterinary publications, 4-H Clubs, Boy Scouts, Girl Scouts, Camp Fire Girls, Future Farmers of America, and to some of the press, announcing the award and inviting nominations. Humane organizations were also advised, and an announcement appeared in the AVMA Journal for February, 1944. Thus, a considerable amount of publicity was given to the award. The organizations named were all entitled to make one nomination each, likewise every member of the AVMA.

Surprisingly, there were but four entries received at the time nominations closed on April 30, 1944. Three came through the Humane Society of Columbus, Ohio, and one through The Anti-Cruelty Society of Chicago. At the time of writing this report, the four entries were being studied by the Committee and it is expected that the award will be announced at the annual meeting in August.

annual meeting in August.

S. T. MICHAEL E. P. SCHROEDER

Research Council

One meeting of the Council has been held since the last report of the Council to the House of Representatives (J. A. V. M. A., (Nov. 1943):352). This meeting took place in Chicago on Nov. 30, 1943. A quorum of the Council was not present at the AVMA meeting in St. Louis in August, 1943; consequently, no business was transacted at that meeting.

All manuscripts submitted for publication in the American Journal of Veterinary Research are referred by the editors to the appropriate member of the Research Council for editorial advice. This function of the Council is now well established and appears to be operating satisfactorily.

The fellowship project of the Council has not been very active during the year and it is not anticipated that much activity in this field of endeavor will be evident until after the war. One Research Council fellowship is now in operation, and at the November meeting of the Council an appointment was made to another fellowship under the jurisdiction of the Council. However, since that time the appointee has been called into the Army.

At the November meeting of the Council, the officers of the previous year were reëlected: E. T. Hallman, chairman; R. A. Kelser, vice-chairman; H. H. Dukes, secretary.

s/H. H. DUKES, Secretary

Representatives

Horse and Mule Association of America

The twenty-fourth annual meeting of the Horse and Mule Association of America was held in the Palmer House, Chicago, Dec. 1, 1943. This was one of the most enthusiastic crowds we have ever had, and the largest attendance. It seems the breeders all have faith in the future of horse production.

For almost a quarter of a century this association has played the leading rôle in promoting horse interests and all allied interests, not of one breed, but of all breeds—and has done more than any one single group in North America to accomplish what it was organized to do. Next December will be the silver anniversary of this organization.

From the beginning to the present time, the Horse and Mule Association has worked incessantly, with all means possible, to promote its cause. The little booklet, "Our Equine Friends", the fascinating story of the different breeds, will have a stimulating effect on all those who read it, in increasing the breeding of good horses and mules. It explains in detail the different breeds and types. Thirty thousand complimentary copies were sent out to teachers of vocational agriculture; about seven thousand to county agricultural agents; three thousand to sheriffs in small towns, to men in the agricultural colleges, and to approximately seventeen thousand other individuals interested in horses and mules. This booklet is advertised in all of the agricultural papers.

The Chicago Sunday Tribune carried a series of articles entitled "Know Your Horses", with attractive cuts furnished by the Horse and Mule Association. This was publicity of the right kind for the horse cause. It created much interest for the readers and those contemplating the purchase of horses. It gave them an inside knowledge of all horses and the types for which they were best

In these days of motor travel, with all kinds of transportation, it is of interest to the general public to know that there have been several breeds of horses developed in the last few years in this country. Many new recording associations have sprung up, sponsoring these new breeds. There are still twelve million horses and mules in use in this country. They have played an important part in the prosecuting of our war effort.

the prosecuting of our war effort.

The past year of 1943 has been a difficult year for our horse and mule breeders. The pressure from governmental sources, to increase meat production to the maximum, the high price of feeds, the shortage of labor, have all tended to interfere with the normal course of horse and mule breeding. The shortage of labor has been the most serious factor. The most dangerous situation today is the

shortage of young work stock. We should increase the breeding enough to replace the ones that are dropping out from age. Mules are selling higher than ever known before. We should encourage more mule breeding.

The interest in the riding horse has been one of the bright spots since the war began, and more riding horses have been sold in every part of the country during this time. Despite the fact of gas and tire rationing, many small horse shows are being held throughout the country. Many small saddle clubs are being organized. Never has there been a time when such interest has been taken in the production of pleasure horses.

From time to time, many outstanding men have appeared on our horse program, prominent veteriarians as well as horsemen. This year the outstanding address was given by Prof. James Scott Watson, head of the agricultural college of Oxford, England. His address was on the existing supply of horses and mules in Canada and Great Britain, the estimated supplies of other European countries, and the possibilities of exports from the United States after the war.

Many of these addresses have been printed by the Association and sent out to their members. Booklets on pastures and feeding improvements, horseshoeing, and other informative subjects, have been distributed among the members and have been a great aid to the horse breeders.

The spring stallion and jack shows were held as usual throughout Indiana, with some good stock showing, and attracting large crowds. Especially was this true of the state stallion show held in Indianapolis.

The Indiana Draft Horse and Mule Breeders Association had a field day June 24, 1944, with a judging contest, prizes to the winners, a barbecue luncheon served at noon. E. A. Trowbridge of Columbia, Mo., gave an address.

Quite an interesting article appeared in Life on the army mule, a smart, hard-working animal which boasts some show ring tricks, showing several cuts of this particular mule, as well as a bunch of army mules on the picket, line. The mule is playing an important part in the army as well as on our plantations in the South.

There has been a great deal of publicity given to the Horse and Mule Association through the activities of the horsemen throughout the country, with fairs and shows, which has been good for both the Horse and Mule Association and the veterinarian, working for mutual benefit of both organizations. I trust our activities will continue to function for the benefit of all, for we have two great organizations—the Horse and Mule Association and the AVMA.

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Representative to the American Association for the Advancement of Science

The war again made it inexpedient, if not impossible, for the A.A.A.S. to hold its annual meeting for the year 1943. The members of the AVMA will be interested to know that the Association has elected as president-elect, Dr. Anton J. Carlson, Professor of Physiology, of the University of Chicago. Some of our veterinary physiologists owe a great deal to Professor Carlson. Your representative has taken care of all the correspondence and other official matters referred to him by the A.A.A.S.

S/WARD GILTNER

Inter-Association Council on Animal Disease and Production

SUGGESTIONS RELATIVE TO AGENCIES CONCERNED WITH ANIMAL INDUSTRY

The production of livestock and poultry is one of the major industries of the United States. According to the 1940 census, the annual value of livestock and livestock products sold or traded was in excess of \$3,500,000,000, and the value of mature animals on hand was in excess of \$4,500,-000,000. Furthermore, the industry has tremendous ramifications which reach into the welfare of every group in the country. It is the source of meat, milk, eggs, and numerous other products and by-products which are essential to the health and welfare of the nation. Through the production, distribution, and processing of its products, it furnishes the livelihood for a high percentage of the population; and since livestock and poultry are the source of such a large part of the food supply there are numerous disease problems, some of which are of great significance to public health. It is evident from these facts that it is tremendously important to keep the industry at the highest possible efficiency.

Through better breeding, feeding, and management practices we have developed highly productive animals, but if such animals are to be kept at peak efficiency, with minimum losses, and if their efficiency is to be further increased, we must have better methods and more knowledge in many areas than is now available. Livestock practices, disease-control programs, and research are, on the whole, far behind our current needs for highly economic livestock and poultry production.

The greatly increased movement of livestock and its transportation by truck, and the mushroom development of community sales barns and auction markets, mean more frequent and rapid exchange of animals, many of which are not disease-free. Intensified production has brought economic benefits to livestock owners, but has increased the hazards to animal health.

It is reported that we lose annually one-third of our pig crop, 20 per cent of our dairy calves, 25 per cent of the pullets put into laying houses, and that we must have four colts born to raise two work horses. These losses result from a variety of causes, known and unknown, and their prevention or reduction can only be accomplished by the combined efforts of all agencies concerned with the welfare of the livestock industry.

Producers and consumers alike have many reasons to be thankful for the splendid work of the federal Bureau of Animal Industry, in cooperation with the various states, looking toward the control of bovine tuberculosis, brucellosis, hog cholera, pullorum disease, and other costly infections. The results have been financially profitable to producers, packers, retail butchers, and consumers, and have been a safeguard to the public

health. But federal funds are usually appropriated for specific purposes only, and this has resulted in great emphasis being placed on the control or eradication of certain diseases or conditions, while others of equal importance are largely ignored. For example, no unified state and federal effort is being expended today on bovine mastitis, rables, trichomoniasis, or a long list of causes of productive inefficiencies and losses. Yet these are of direct concern to all of us. When animals fail to grow or to produce, from any cause, the nation's meat supply is endangered. When an infectious disease occurs in a herd or flock, it is not alone the owner's misfortune—it is a menace to the community, and its control a public responsibility.

In submitting the following recommendations, the Council is not unmindful of the splendid work which has been done by the Bureau of Animal Industry since its inception in 1884, by the state agricultural colleges and experiment stations, by state sanitary officials, and by private practitioners. But it feels that the time is at hand when an evaluation should be made of existing programs and agencies, with the aim of improving and extending their benefits to the entire industry. It is believed that by certain changes in the use of the personnel and facilities of existing agencies, including changes in administrative policy where indicated, more efficient assistance can be rendered to the livestock and poultry industries. It should be clearly understood that these suggestions do not constitute a criticism of any existing agencies, but rather a recognition of changing problems, and a sincere desire to help promote the welfare of the animal industry, which is so essential to the stability of the nation.

SUGGESTIONS FOR INCREASED EFFICIENCY OF ANIMAL-DISEASE CONTROL

1) The allocation of state and federal funds for disease control within a state should be on a basis sufficiently flexible to permit concentration on the study, control, or eradication of diseases peculiar to that state, or as they assume importance. Such work should be supplementary to and integrated with the work on communicable diseases and other programs being conducted on a national scope.

2) Diagnostic laboratory facilities should be further developed and modified to meet the changing needs of each state. The guiding principle should be the study and diagnosis of disease as it occurs in the field, considering disease in the broadest sense.

3) Since the collection of vital statistics is essential to a complete understanding of disease losses and to the planning of corrective measures, a plan should be inaugurated for the collection, compilation, and prompt periodic distribution of data regarding morbidity and mortality among domestic livestock and poultry.

SUGGESTIONS CONCERNING RESEARCH IN ANIMAL INDUSTRY

A fairly adequate pattern for research in the animal industries is already established. The principal needs here seem to be for closer integration of activities of the research programs between the states, between state and federal agencies, and between federal agencies themselves. Research programs should be flexible, almed at the most important problems of the industry, and planned in such a way as to obtain the answers in a minimum time and at the least cost.

1) Such research should be conducted, in so far as possible, at existing experiment stations and in existing federal and state laboratories. It could be aided by adoption on the part of the Bureau of Animal Industry of a policy favoring more extensive coöperation with research agencies in the states on specific projects.

2) Joint planning of programs by various agencies is very desirable, especially as they relate to

the most important problems. Such planning should bring to bear on the solution of any problem the coordinated help of specialists in any field needed, as for example, bacteriology, pathology, chemistry, genetics, endocrinology, nutrition, etc.

3) Closer integration of the activities of research agencies and control agencies would result in more effective use of their personnel and facilities with obvious benefit to the industry.

SUGGESTIONS FOR IMPROVING EDUCATIONAL WORK IN ANIMAL-DISEASE CONTROL

The general basis for the carrying out of effective educational programs already exists in the agri-cultural extension service, but it has not been well developed as it relates to animal-disease preven-

tion and control.

More effective means should be developed within the agricultural extension service for carrywithin the agricultural extension service for carry-ing the work on animal-disease prevention to pro-duction centers. This should include plans in which the primary function of the extension vet-erinarian would be to carry the latest results of research to practicing veterinarians in the field, and to assist in the education of producers with

respect to sanitary practices and methods,

2) The educational programs should be closely correlated with the disease-control and research

programs in each state.

SUGGESTIONS CONCERNING THE IMPORTATION OF ANIMALS AND ANIMAL PRODUCTS INTO THE UNITED STATES

A healthy livestock population is the first requirement for successful husbandry, and our national policy with reference to inspection and quarantine should be aimed at improving the position of our industry in this respect.

1) We should maintain and improve our existing facilities for inspection and control of im-

ported livestock and livestock products to avoid the introduction of disease or parasites which could result in permanent damage to the industry.

2) It is strongly urged that no attempt be made to alleviate our present shortage of foods of animal origin by the importation of products which might introduce infections such as foot-and-mouth disease, rinderpest, and fowl plague.

SUGGESTIONS CONCERNING THE TRAINING OF ANIMAL SCIENTISTS

Continual changes in the pattern of the livestock industry make it essential that those agencies concerned with the training of leaders in this field keep their programs in line with such changes. The Council respectfully calls to the attention of college administrators, government bureaus, and professional boards the need for periodic exami-nation and revision of curriculums to bring about

these adjustments. Specific examples include:

1) Planning of certain curriculums to focus more attention upon special areas of study during

the last two years.

2) Placing more emphasis upon preventive medicine and livestock sanitation in veterinary curriculums.

Placing of more emphasis upon graduate study as a prerequisite for entrance into teaching and research careers in the animal sciences.

Making more widely available, especially to junior employees of proved ability, the opportu-

nity for graduate study.

It has clearly been the intent of Congress and the state legislatures to provide for the establishment of agencies which will effectively meet the needs of our people and, at the same time, expend appropriated funds to the best advantage. The problem of protecting and promoting the welfare of our animal population, and of bringing about improvement in the industry, presents a challenge to federal and state workers alike. At best, the problem is far too large to be solved with the

facilities that will be available at any given time. It is, therefore, essential that all agencies con-cerned with this problem coordinate their activities to get the job done most effectively. It is the hope of The Inter-Association Council that these suggestions may help in attaining this objective,

s/H. W. JAKEMAN

Representative to National Livestock Conservation Program

The National Livestock Conservation Program was organized in the Spring of 1943. It was sponsored by the National Committee on Boys' and Girls' Club Work in coöperation with the U. S. Department of Agriculture, state agricultural coleges, 4-H Clubs, Future Farmers of America, the American Veterinary Medical Association and the

livestock, dairy, poultry and allied industries.

The director of the program is Fred H. Leinbach, Ph.D., formerly professor and head of the department of animal husbandry, University of Maryland. The administrative committee is headed by Thos. E. Wilson, chairman, Wilson & Co., Chicago, and its members include J. W. Burch, University of Mismembers include J. W. Burch, University of Alissouri; Cliff D. Carpenter, National Poultry Advisory Council, Chicago; Ralph M. Field, American Feed Manufacturers' Association, Chicago; J. L. Kraft, Kraft Cheese Co., Chicago; Guy L. Noble, National Committee on Boys' and Girls' Club Work, Chicago; A. C. Sayfarth, International Harvester. National Committee on Boys' and Girls' Club Work, Chicago; A. C. Seyfarth, International Harvester Co., Chicago; W. T. Spanton, U. S. Office of Education, Washington, D. C.; M. L. Wilson, Director of Extension, USDA; P. O. Wilson, National Livestock Producers Association, Chicago, and J. G. Hardenbergh, representing the AVMA. In addition, there are some 14 other progress of there are some 14 other members of the program council.

The National Livestock Conservation Program is "direct action and educational cooperative effort, designed to help bring about the maximum supply of meat, milk, and other animal products necessary to the prosecution of the war, and for the welfare of the livestock industry thereafter, through the elimination of needless losses, wastes, and inefficien-cies in the production and marketing of livestock." It functions "as a liaison agency, correlating, integrating, and popularizing scientific information and it available in really usuable form to the livestock industry."

Since the program was first organized, the director, Dr. Leinbach, has personally visited about 40 states and presented the national program to representative groups in these states. As a result, most of these states have organized their own livestock conservation committees and engaged in active campaigns at state and county levels to carry forward the objectives cited above. In mapping out state plans, representatives have been included from the extension service, state and federal veterinary officials, livestock associations, feed manufacturers, the packing industry, milk distributors, and many other groups.

As aids in the work of carrying information to the "ultimate consumer," namely, livestock growers, dairymen, and poultrymen a series of posters, pamphlets, and circulars has been produced and pamphlets. made available to cooperating agencies in the various states at cost. Large numbers of these have been distributed at meetings of farmers on a community or county basis. The literature is designed with a view to emphasizing, graphically and conwith a view to emphasizing, graphicary and co-cisely, the important factors in disease control, management, feeding, breeding, etc. The series of posters and circulars has covered hog cholera, bovine brucellosis, mastitis, baby pig losses, cattle grubs, avian tuberculosis, nodular worms, and brulses in market livestock. The subject matter of

the circulars relating to disease conditions has been submitted to the AVMA for review prior to publi-

In organizing the National Livestock Conservation Program, it is of special interest to the profession that, from the beginning, representatives from the field of veterinary science, state and federal veterinary officials, and similar agencies responsible for disease control, have been included. Also, in organizing the program on state and county levels, the director, Dr. Leinbach, and his associates, have taken pains to include veterinary representatives for the purpose of insuring understanding of, and cooperation with, the program in so far as its veterinary disease-control aspects are concerned.

Your representative has attended the meetings of the Administrative Committee from time to time and has been impressed with the sincere interest in, and sound approach to, the work on the part of Chairman Thos. E. Wilson, Director Leinbach, and

their associates.

There is one aspect of the work of organizations such as the National Livestock Conservation Program, the National Poultry Advisory Council, and the Inter-Association Council on Animal Disease and Production which, in my opinion, should be carefully considered by the veterinary profession, its various associations, and by state veterinary officials. It is this: As a result of these educational campaigns, dairy farmers, livestock growers, and poultrymen, both young and old, have been made acutely conscious of what healthy herds and flocks mean to their welfare and prosperity and the part which effective disease-control measures can play. They have been taught that disease may make the difference between success and failure, and have been shown something of what can be done to com-bat the inroads of disease. These educational programs no doubt will continue after the war. It, therefore, behoves the veterinary profession in all its phases to be more alert than ever to its responsibilities, to demonstrate the value of qualified veterinary service, and exert proper guidance in disease-control programs. If this be not done, the initiative will pass to organizations and agencies outside the profession, and we shall find ourselves trying "to keep up with the parade" instead of taking our rightful places in its leadership. In my opinion, this is a challenge which must and can be

s/J. G. HARDENBERGH.

National Poultry Advisory Council

Your representative has attended several meetings of the Council in Chicago during the past year and one in Washington. The work of the Council has been reported in the JOURNAL from time to time and the subject matter of three Council bulletins has also been published in the JOURNAL ("Chicken Brooding and Rearing Program", "Laying House Program", and "Turkey Rearing Program"). The AVMA also cooperated in the work of the Council by buying and mailing copies of the two first-named bulletins to some 4,500 nonmembers of the Association who would not have an opporunity to read the bulletin material in the Journal.

Two developments of special importance in the operations of the Council took place during the year. Early in 1944, the federal Bureau of Animal Industry discontinued its collaboration in the work, and government participation was taken over by the Feed and Livestock Branch of the War Food Production Administration. Dr. Cliff D. Carpenter, executive secretary of the Council was made special assistant to the chief of the branch named. As an outgrowth of this development, the work of the Council was expanded so as to allow Dr. Carpenter

to assist in organizing programs for livestock production and feed conservation along lines similar to those which had been developed and so effectively carried out in the poultry field since March, 1943. The first program brought out was by the awine industry council.

In May, it was announced that Dr. Carpenter had been appointed chief executive officer of the In stitute of American Poultry Industries, but would continue his work with the National Poultry Advisory Council until a successor had become familiar with the work.

The effectiveness of the programs developed by the Council is evidenced by the fact that, for the first time, a nationwide reduction in mortality of all birds 3 months old and over was reported, the reduction being 3.2 per cent. Further evidence is the tremendous production of eggs which far exceeded quotas and expectations and which came to a peak in the Spring of 1944. In the first quarter of the year, there were produced 130 million dozen eggs above the goal that had been set.

s/J. G. HARDENBERGH

Representative to the Division of Biology and Agriculture, National Research Council

The annual meeting of the Division of Biology and Agriculture of the National Research Council was held in the board room of the National Academy of Sciences and National Research Council building, Washington, D. C., April 8, 1944. Dr. Robert F. Griggs, chairman of the Division, presided.

The membership of the Division comprises re-search societies in the fields of blology and agri-culture. This year the Soll Science Society and the Wildlife Society were invited to become members of the Division.

The Division voted to recommend to the Executive Board of the National Research Council the establishment of a fellowship board in the agriestablishment of a fellowship board in the agri-cultural sciences separate from, and independent of, the present Fellowship Board in the Natural Sci-ences. It was felt that in this way men trained in the agricultural sciences would have equal opportunity for appointment to fellowships with those trained in the other sciences. Your representative believes that such a board would give sympathetic consideration to the applications of suitable young veterinarians for fellowships on the National Research Council.

The Division voted to recommend the establishment of an agricultural science board of the Division. This board would be similar to the present Food and Nutrition Board and would be composed of leaders in agriculture, who would appoint committees to study specific agricultural problems and report back to the board. Present committees and report back to the board. Present committee in agriculture such as the Committee on Animal Nutrition and the Committee on Animal Health could be assigned to the board. However, existing committees assigned to the board would lose none of their initiative. Rather, they would be stimulated and supported by their new assignment.

The Division voted to set up a personnel information committee to give advice and information to the member societies of the Division, particularly with respect to the problems that will arise upon demobilization after the war. A great many scientific men will be released from war projects and places must be found for them. Your representative feels that the AVMA was better prepared to apply the talents of its members to the war effort, and probably will handle demobilization problems better, than many of the other constituent societies of the Division. The explanation lies, in large

part, in the existence of a strong central organization of the AVMA.

The Division voted to recommend the establishment of a bimonthly journal to replace the present bimonthly reports which are mimeographed. The proposed journal would, in many instances, publish the scientific contributions of its committees and other important information.

Comments on the activities of, or reports from, numerous committees of the Division were heard

or received.

The following resolution was adopted: "Resolved, that the Division of Biology and Agriculture emphasizes the importance of the continuance of scientific meetings during the war and believes every effort should be made to provide for them."

s/H. H. DUKES

Representative to the Division of Medical Sciences, National Research Council

The annual meeting of the Medical Division of the National Research Council was postponed until June 1, 1944, because of the impossibility of the delegates to attend the regularly scheduled meeting.

Chairman L. H. Weed pointed out in his reports that during the present year, as well as in past years, the efforts of the Council were primarily concerned with the war. In this connection, the activities have been concentrated on the development of procedures of immediate advantage in our war effort and in many ways have been successful in preserving health and life among our fighting forces.

The granting of fellowships, which in normal times are invariably filled in accordance with available funds, were in many instances deferred because of the lack of applicants for such fellowships. Many of the eligible young men, of course, now being engaged in the war had to abandon their desire for obtaining such fellowships in the various branches pursued by the Research Council.

The chairman further emphasized the effort of

The chairman further emphasized the effort of the Council to obtain a complete medical history of the war, which is progressing favorably on all phases of medical activities. All important developments have been published not only in the United States but also in foreign countries.

Dean Davison reported on the activities in tropleal diseases. He stressed the advantages obtained from the special courses given at the different colleges and universities for instructors in tropleal medicine; also, the advantages of having delegated such instructors to foreign countries, especially of Central and South America, to obtain the practical knowledge in the control of exotic diseases. At present, slides, maps, publications, etc., are available and are being disseminated through the Council. The results of these activities have been gratifying and the Medical Council hopes to continue this program in the postwar period. It has been noted that no efforts have been made to embark on the study of tropical diseases of animals, and, in this respect, it was suggested to the Research Council that in all activities pertaining to the study and control of tropical diseases the animal diseases should be included because of their importance, not only with regard to the possibility of introduction into this country but also in our effort to assist all countries in rehabilitation.

General Simmons reported on the Army's effort in regard to the activities of that branch of the war service, and the excellent cooperation with the Council. This was concurred in by the representative of the Navy Department.

The Production Board was given favorable commendation by the Council. It has further been pointed out that drugs and hospital and medical supplies are now furnished under UNRRA and that the list of requirements for the various countries along this line has been prepared in Great Britain with the assistance of foreign governments in exile. The list has been revised by the Council. In view of the fact that many of the preparations are practically unknown in some of the foreign countries, it has been decided to prepare a small pharmacopoeia in six languages, and, furthermore, to label all preparations sent from this country in six languages.

In consideration of the expansion of civil aeronautics following the war, request has been made for a permanent committee to function on medical problems, the financing of such a committee to be carried out by the Civil Aeronautical Division. This suggestion received favorable action by the Council.

Requests also have been made for research on products which heretofore have been given only passing consideration, as the possibilities of the development of important preparations are evident.

It was also accepted that the National Foundation for Infantile Paralysis should extend its activities in wider fields.

The request of the AVMA for the establishment of a new registry by the Army Medical Museum was approved.

A new committee on convalescents and rehabilitation has been set up, as it is realized that the effort in this direction is not only immediate but will become especially important after cessation of our war activities.

The coördination of malaria studies by the Army, Navy, Public Health, and other agencies has been especially urged. Atabrin, after intensive studies, now is giving better results through the development of better methods for treatment.

During the year, the various committees of the Council held 171 regular meetings, besides many other meetings of the various subcommittees. In all, the activities of the Medical Division have been very fruitful and have resulted in the development of important and valuable contributions in the advancement of our medical sciences.

s/ A. EICHHORN.

Pet Animal Industry Advisory Committee

The Pet Animal Industry Advisory Committee was organized by the War Food Administration in the summer of 1943 for the purpose of helping to guide governmental agencies concerned with food production and conservation, in line with a rational pet animal maintenance program. The Committee has a large membership including representatives from the dog food industry, dog writers and publications, humane organizations, dog breeders, the AVMA and the AAHA.

The Association has been most ably represented at meetings of the Council in Washington by Dr. J. B. Engle, alternate, who is also president of the American Animal Hospital Association and as such is thoroughly familiar with the dog feeding problem and the work of the Joint Committee on Fronds of the two associations.

Foods of the two associations.

During the year, the War Food Administration terminated Food Distribution Order 58 which had to do with the production and distribution of pet foods, particularly with reference to their content of certain scarce ingredients such as proteins of animal origin, and vitamins. Discontinuation of the order permits manufacturers to return to prewar formulas provided they can obtain the necessary ingredients.

sary ingredients.

From present indications, unless critical scarcities of certain foods or feeds develop, the Committee will probably not be called upon for any special action in the near future.

s/J. G. HARDENBERGH

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